A 2200-5-U 4/89

AMA Center for
Health Policy Research

Socioeconomic Characteristics of Medical Practice 1988

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The information contained in this volume is from the AMA Socioeconomic Monitoring System. The AMA Center for Health Policy Research directs the Socioeconomic Monitoring System in cooperation with the AMA Division of Survey and Data Resources.

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may be be purchased from:
Order Department OP 228/8
American Medical Association
P.O. Box 10946
Chicago, Illinois 60610-0946

KDB: 88-583: 2.5M: 12/88

ISBN 0-89970-340-2

Foreword

Increases in physician supply, public and private initiatives to control health care costs, and developments in professional liability have all contributed to a rapidly changing medical practice environment. Given these developments, it is imperative that physicians, policymakers, and the public have current, accurate, and relevant information on the socioeconomic aspects of medicine. *Socioeconomic Characteristics of Medical Practice 1988* (the "Gray Book") is designed to provide such information.

The 1988 Gray Book represents the sixth edition of *Socioeconomic Characteristics of Medical Practice*. This year's edition has an expanded introduction that assists readers in interpreting the book's information. It provides definitions for the statistical terms used in the book and gives examples of how best to utilize the information presented in the tables. The 1988 Gray Book also includes articles on trends in medical practice in the 1980s, medical malpractice, Medicare participation rates, and physician earnings. The articles are followed by detailed tabulations of statistics and trend information on a broad range of physicians' practice characteristics, including income, expenses, fees, and a number of specific practice activities. It is hoped that the improvements made for this year's book and those made in the past have enhanced the quality of our publication and increased its usefulness to our purchasers.

A program of the magnitude of the Socioeconomic Monitoring System (SMS) requires major commitment and substantial effort from many individuals. Although it is impossible to name each individual, I would like to express my gratitude to all who have contributed to SMS and this edition of the Gray Book. Special thanks are due David W. Emmons, Ph.D., director of the Office of Socioeconomic Research Information, who had major responsibility for oversight of this publication, and Norbert W. Budde, Ph.D., director of the Division of Survey and Data Resources, whose division has cooperated with the Center for Health Policy Research in many of the activities relating to SMS.

James F. Rodgers, Ph.D.
Director
Center for Health Policy Research

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Introduction: How to Use Socioeconomic Characteristics of Medical Practice

Socioeconomic Characteristics of Medical Practice (the "Gray Book") is an annual volume with studies and statistics based on information collected by the AMA Socioeconomic Monitoring System (SMS). The Gray Book maintains the tradition of the AMA, established in the past by the series *Profile of Medical Practice,* as a primary source of baseline data on socioeconomic aspects of medicine.

This volume is primarily devoted to providing detailed information on medical practice characteristics in 1987 based on data collected by SMS surveys. However, selected trends are shown for characteristics for which similar data were collected in the past on earlier SMS surveys or by the AMA Periodic Survey of Physicians.

The information in this volume is intended for use by a variety of individuals who come into contact with medical practice issues from different perspectives. Physicians might use this information in assessing the likely impact of such practice changes as relocating or joining a group practice on their earnings, patient volume, and practice costs. Medical practice consultants may use this information to improve their ability to assess a client's performance and suggest areas for improvement. Hospital administrators may find the volume useful in determining appropriate compensation levels and hours for their medical staff.

Definition of Statistics

A statistic is simply a summary measure based on survey results to describe an attribute of the distribution of a characteristic across a population; in this instance a population of physicians. The Gray Book provides a mean and standard error for each characteristic presented in the tables. Median net income and expense figures are also presented, as are figures for net income at the 25th and 75th percentiles.

Although the mean and median are more commonly employed statistics, the information on the 25th and 75th percentiles of each characteristic is included to emphasize how characteristics vary across groups within the physician population. In some instances, the information on the 25th and 75th percentiles might be more typical of the experience of subgroups of physicians than either the mean or median.

It must be kept in mind that the statistics presented are only estimates of population characteristics derived from surveying a sample of physicians. This may cause characteristics of the full physician population to differ from information from SMS survey results. For this reason, the results include measures that should be considered carefully in judging what degree of confidence to attribute to any inferences drawn from the SMS results.

This is especially true of the within-specialty breakdowns by census division (e.g., net income for surgeons in the New England Census Division), which appear in tables that present current year information only. These figures are often calculated with a small number of observations, although figures calculated with less than 20 observations are not printed. Small sample sizes often cause the figures to fluctuate from year to year—more from sampling error than from actual changes in the characteristic. Hence, the user should be cautious when extrapolating trends from this information. The standard error of the mean, which is defined below, should be used to determine if year to year changes in these figures are statistically significant. The statistics presented for each characteristic and a brief discussion of how each may be used follows.

Mean (or Average)

The sample mean is an estimate of the average value of a characteristic for a given population. The mean is often referred to as a measure of "central tendency" for a characteristic because it tends to be located in the middle of the distribution of all possible values for the characteristic. However, it may neither be the most common nor a very typical value. For example, for many physician characteristics, a large share of physicians are concentrated in a range of lower possible values for the characteristic while a small share of physicians have extremely high values. An example of this type of characteristic is physician net income after expenses before taxes. For such characteristics, the mean will exceed the most common value and the values representative of the experience of typical physicians. In these instances, the median (as discussed below) may be a more appropriate measure to use for making some types of inferences.

If information were available on a characteristic from the entire population of physicians in a group, the mean would be computed as the sum of the values of the characteristic across the group divided by the number in that group. This approach would also be followed using sample information to obtain an estimate of the mean if the sample were perfectly representative of the entire group. However, an examination of SMS survey results indicates that, although the initial samples are representative of the underlying physician population, some physician groups are underrepresented and others overrepresented among those physicians who complete the survey. To alleviate the biases that would arise from this result, the estimates of the mean reported in this volume are weighted averages of survey responses. The weights give greater importance to information reported by groups of physicians who are underrepresented in the final survey sample in the calculation of the mean so that it provides a more accurate reflection of the population mean. A further discussion of the weighting procedure and computation methods appears in Appendix B.

Standard Error of the Mean

The standard error is used in assessing the reliability of the estimate of the mean based on sample information in drawing conclusions about the mean of a characteristic for the underlying population. Larger standard errors indicate that the sample mean is subject to greater possible error as a representation of the mean for the entire population.

Two factors directly affect the standard error. First, the standard error diminishes as the number of respondents increases. Second, the standard error will tend to be greater for characteristics with greater dispersion in the values in the population. This is because greater dispersion increases the chance that a single unusual value will be reflected in the sample information (sometimes called an "outlier"), which will have inordinate influence in the calculation of the mean. However, as the overall sample increases, the influence of any single response will diminish so that outlier problems that may introduce error into the estimates of the means will diminish.

A common use of standard error estimates is in the construction of confidence intervals. Confidence intervals are used for making statements about the probability with which the mean for the population of a physician group falls within certain bounds. For a 95% confidence interval, the bounds are given by the mean estimate plus 1.96 times the standard error and the mean estimate minus 1.96 times the standard error. The mean for the population will fall within these bounds with a probability of 95%. For a 90% confidence interval, the bounds are given by the mean estimate plus and minus 1.64 times the standard error.

For example, the sample mean number of office visits per week per physician in 1987 was 77.0 and the standard error was approximately 1.0. This indicates that there was a 90% probability that the population mean was between 75.4 and 77.6 and a 95% probability that the population mean was between 75.0 and 79.0.

25th Percentile

The 25th percentile is the value of the characteristic larger than that experienced by 25 percent of a specified group and exceeded by the remaining three-quarters of that group.

Median (or 50th Percentile)

The 50th percentile is the value of the characteristic larger than that experienced by half of a group, but smaller or equal to that experienced by the other half. This is a measure of central tendency often used as an alternative to the mean because it provides a better representation of the typical experience of individuals in the population group. It is also less subject to the influence of outliers than the mean.

75th Percentile

This is the value of the characteristic larger than that occurring for 75 percent of the physician group, but equal to or exceeding that for the other 25 percent.

A series of appendices relating to the methodology of the SMS surveys, the SMS questionnaire, and definitions of variables reported in the Gray Book are included at the end of the book. These appendices are designed to answer most questions about how information included in this volume is generated. We urge readers to avail themselves of this information in considering the results published elsewhere in the volume.

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Medical Practice in the 1980s as Measured by the AMA Socioeconomic Monitoring System

by William D. Marder and Sara L. Thran

The AMA began the Socioeconomic Monitoring System (SMS) in 1981 to provide timely, credible information that would describe the changing patterns of medical practice. Since its inception, the program has consistently collected information on physician practices, including hours worked, patients seen, professional expenses, net income, and other key indicators of practice conditions. This article summarizes the 1982-88 SMS data.

SMS was not the first socioeconomic survey program undertaken by the AMA. Beginning in 1966, the Association conducted the Periodic Survey of Physicians (PSP), an annual mail survey of office-based physicians. During the 1970s, the PSP collected data on key indicators of practice and was used to produce an annual volume, *Profile of Medical Practice*. The PSP program proved to be an adequate, cost-effective method to describe trends in physician practice, cf. Glandon and Werner (1981). However, during the 1980s, with the prospect of continued rapid growth of the physician population and potentially rapid changes in the structure of the health care delivery system, the AMA found a mail-based data collection methodology to be inadequate. There were two key problems. First, the PSP required almost a year from the time the questionnaire was completed until the results were available. Second, PSP response rates declined during the last years of the program.

SMS was designed to address both of these problems. The AMA Center for Health Policy Research directs SMS in cooperation with the AMA Division of Survey and Data Resources.

Changes in the the Medical Marketplace

Several important trends have affected the medical marketplace during the 1980s. Enrollments in U.S. medical schools grew to over 67,000 in 1983 with small declines thereafter. The large increase in medical school enrollment that had been building from the 1960s led to a 17.3% increase in the number of active physicians between 1980 and 1985 alone. Much of the increase in physician manpower occurred in the groups surveyed by SMS. Office-based practitioners grew from 272,000 in 1980 to 330,197 in 1985. Much smaller growth was experienced for those physicians identified on the AMA Physician Masterfile as hospital-based; their numbers grew only 1.7%, from 42,470 to 43,212 during the same period. Because the civilian population was growing much less quickly, the physician-to-population ratio increased from 192 physicians per 100,000 population in 1980 to 214 five years later. Not only was the number of physicians increasing but the composition of the physician population was also shifting. Larger fractions of the graduating classes of U.S. medical schools were women physicians. As a result, the proportion of women in the active physician population rose from 11.2% in 1980 to 14.6% in 1985.

In addition to the increasing numbers of physicians competing for a relatively stable number of patients, other forces were changing the environment. National expenditures on health care had been rising rapidly for years. Governmental agencies that were paying large portions of the nation's health care bill began to resist spending larger amounts. Health

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The authors are, respectively, Director of the Department of Manpower and Demographic Studies and Director of Special Projects in the AMA Center for Health Policy Research. Opinions expressed in this article are those of the authors and do not necessarily reflect the position of the American Medical Association.

Table 1. **Response Rates to the SMS Survey Program**

Initial Sample	1983	1984	1985	1986	1987	1988
Number of Respondents	2502	2809	2451	2606	2608	2751
Overall Response Rate	57.2%	57.2%	56.5%	60.1%	63.6%	66.4%
Specialty						
General/Family Practice	57.2	57.6	59.9	58.4	61.0	67.4
Internal Medicine	49.2	45.2	44.2	54.3	56.0	62.0
Surgery	52.8	54.2	50.3	56.6	61.8	63.5
Pediatrics	59.6	64.5	67.7	68.0	68.6	73.5
Obstetrics/Gynecology	56.3	58.4	56.0	57.6	68.6	66.0
Radiology	74.9	63.9	62.5	76.2	70.7	76.0
Psychiatry	62.2	69.8	67.1	58.9	67.3	66.1
Anesthesiology	65.3	75.5	70.1	71.2	76.5	64.7
Pathology	69.2	77.0	64.6	78.2	80.0	79.1
Other	63.0	56.8	64.9	62.5	64.8	69.6
Reinterview Sample						
Number of Respondents	1450	1193	1589	1408	1406	1384
Overall Response Rate	72.0%	77.4%	73.2%	71.8%	74.0%	81.6%
Specialty						
General/Family Practice	67.4	77.2	72.8	67.4	73.5	79.5
Internal Medicine	68.3	72.4	65.4	70.2	71.0	76.6
Surgery	68.1	73.1	68.7	68.6	72.2	79.1
Pediatrics	75.2	88.7	76.2	73.2	81.7	89.7
Obstetrics/Gynecology	73.2	75.4	68.3	73.0	76.5	82.7
Radiology	80.0	76.6	78.9	80.9	79.1	92.3
Psychiatry	82.8	86.5	79.7	76.3	72.6	86.9
Anesthesiology	79.8	78.1	83.7	73.2	78.2	83.9
Pathology	84.1	86.5	89.2	82.1	80.9	89.1
Other	69.3	79.2	78.2	72.5	68.6	77.6

Note: Response rates by specialty are not available for 1982; the initial response rate was 58.2% and the response rate for the quarterly reinterview sample was 78.4%. There were 509 completed interviews for the reinterview sample and 3,306 interviews for the initial sample in 1982. Response rates by specialty were significantly different at the $p = .01$ level for the initial sample in each year and for the reinterview sample in 1983-1985, 1987, and 1988.

maintenance organizations and other "alternative delivery systems" were touted as potential policy instruments that would change the way physicians practiced and reduce health care spending.

The AMA designed SMS to measure change in this environment. The program was structured to detect significant changes in key indicators of medical practice. This report summarizes findings from the SMS program. The next section describes the SMS data collection methodology and the reporting techniques utilized in this study. Succeeding sections provide an overview of changes in the physician population composition as represented by SMS and report results for selected key practice indicators. A final section summarizes our conclusions. From this systematic view of the medical marketplace we conclude that there is much more stability than change during the 1982-88 period and certainly more stability than is commonly believed.

Methods

SMS is based on a random sample of nonfederal patient care physicians, excluding resident physicians, drawn from the AMA Physician Masterfile. Since 1906, the AMA has maintained a Masterfile containing professional and practice-related information on all physicians in the United States regardless of membership in the Association. Beginning in 1969, the AMA has conducted a census survey of the physician population every four years. This census is now a key element in maintaining the Masterfile. Between censuses, questionnaires are sent to any physician completing medical school in the United States, entering an approved residency training program, or otherwise coming to the attention of the AMA. Whenever the AMA learns of a change in address or some other change in status, the physician is sent a copy of the most recent census questionnaire and asked to update the information. Thus, the Masterfile contains current information on the physician population. At the end of each year the Masterfile records are "frozen." The AMA publishes summary statistics of this year-end data in the annual volume, *Physician Characteristics and Distribution*, which includes a more detailed description of the Masterfile.

Several months prior to the start of the field period for an SMS core survey, a five percent stratified random sample of the nonfederal patient care physicians, excluding resident physicians, on the AMA Physician Masterfile is selected for the initial sample in the upcoming survey. The stratifying variables are specialty and location. Stratifying the sample ensures that SMS will provide reliable estimates for each of the ten specialty groups and broad geographic areas for which data are reported. With some exceptions, individual physicians who have responded to the SMS within the past three years are excluded from the eligible population. The key exception is the "reinterview" component, a group of respondents from the previous year's survey who will be reinterviewed in the current survey. For some analyses, the reported changes for the reinterview group can be particularly useful. A full description of the SMS survey is provided in Appendix A.

Table 1 presents the response rates for each of the annual SMS core surveys. The table reports response rates separately for the initial and reinterview samples to indicate their relative contributions to the overall response rate. The initial sample response rate of 66.4% and reinterview sample response rate of 81.6% in 1988 compare favorably with other surveys of physicians. The Health Care Financing Administration's Physician Practice Cost and Income Survey of 1984-85, achieved an overall response rate of 68.0% with a much longer field period and much larger budget. The National Center for Health Statistics surveyed office-based physicians in the 1985 National Ambulatory Medical Care Survey and achieved a 70.0% response rate in a program that asked for less sensitive data than SMS. The *Medical Economics* survey of physicians, which is the only other ongoing survey of socioeconomic characteristics of medical practice, achieved an unadjusted response rate of 20.4% in 1988. However, our experience from SMS suggests that their adjusted response rate for the eligible sample (i.e., comparable to figures in Table 1) might be as high as 27.0%. Thus, SMS response rates are competitive with those of other physician surveys.

Statistically significant variations in response rates by specialty, particularly for the initial sample, are of greater concern since they indicate potential bias in the survey data. Lower response rates in internal medicine and surgery may reflect the busier work schedules of physicians in these fields and may introduce downward biases into estimates of hours worked, patient visits, and physician income. Survey efforts have been initiated to limit variations in response rates. Nonetheless, significant differences remain. Consequently, our analysis will use statistical techniques to adjust for the possible bias in the data. This study employs a standard survey-weighting strategy to correct for response rate variations. The weighting technique is described in Appendix B of this volume.

Changes in the Physician Population Composition as Depicted by SMS

Table 2 shows the changing composition of the nonfederal patient care physician population as represented in the SMS program. The AMA's *Physician Characteristics and Distribution* based on the Masterfile data provides an alternative view of the population. The differences between the Masterfile data and the SMS data are attributable to two sources. First, the published Masterfile data usually include all physicians by specialty, not just those who provide 20 hours per week in patient care. Second, the most commonly cited Masterfile data on patient care physicians include resident physicians while the SMS data do not. In spite of these differences, the SMS data reflect the same trends in the composition of the

Table 2. **The Changing Composition of SMS Respondents**

	1982	1983	1984	1985	1986	1987	1988
Specialty							
General/Family Practice	16.2%	15.4%	16.2%	16.5%	16.0%	15.6%	15.7%
Internal Medicine	20.5	20.5	20.1	19.4	19.5	20.9	21.7
Surgery	22.3	21.8	21.0	20.9	20.8	20.8	20.9
Pediatrics	6.5	6.9	6.9	6.9	7.0	6.9	6.9
Obstetrics/Gynecology	6.8	7.0	6.9	7.0	6.7	6.7	7.0
Radiology	5.0	5.5	5.5	5.3	5.5	5.6	5.1
Psychiatry	7.0	7.3	7.3	7.2	7.1	6.8	6.9
Anesthesiology	4.6	4.6	4.6	4.9	4.9	4.9	4.9
Pathology	2.6	2.8	2.7	2.6	2.5	2.4	2.4
Other	8.5	8.3	8.9	9.2	10.1	9.4	8.5
Sex							
Male	91.6	91.5	91.1	90.3	89.6	89.6	89.1
Female	8.4	8.5	8.9	9.7	10.4	10.4	10.9
Age							
Less than 36 years	19.5	16.8	16.0	14.8	15.6	14.1	11.6
36-45 years	32.1	34.5	35.4	35.7	35.6	37.4	36.9
46-55 years	24.2	24.7	23.9	24.0	24.0	24.8	26.1
56-65 years	17.6	17.7	17.8	18.8	18.2	17.1	18.7
66 or more years	6.7	6.3	6.8	6.7	6.6	6.6	6.8
Location							
Nonmetropolitan	16.7	17.6	17.2	17.4	17.6	16.6	16.6
Metropolitan—							
Less than 1,000,000	35.7	36.1	34.3	33.2	34.8	35.8	35.6
1,000,000 and over	47.6	46.3	48.6	49.5	47.7	47.6	47.9
Type of Practice							
Solo	45.6	40.5	43.3	42.7	40.9	40.2	38.5
Non-solo	54.4	59.5	56.7	57.3	59.1	59.8	61.5
Country of Medical School							
U.S.	79.4	79.0	79.3	78.3	78.4	78.4	77.6
Foreign	20.6	21.0	20.7	21.7	21.6	21.6	22.4

Note: Differences in the distributions of sex, age, and type of practice between 1982 and 1988 were statistically significant at the p = .01 level.

physician population as those measured by the Masterfile data.

Between 1982 and 1988, the percentage of female physicians among SMS respondents grew from 8.4% to 10.9%, a remarkably large shift for such a short period of time. Women physicians have traditionally worked fewer hours than men, and tend to be employee physicians. Hence, an increase in the proportion of female physicians may lower estimates of average hours worked and average income. Such an effect will be small, however, since women continue to comprise a small proportion of the physician population.

The number of older, over age 55, physicians grew slightly, but the age group experiencing the largest change was the 36-45 year-old category. This group includes the first classes from the greatly enlarged U.S. medical education establishment of the 1960s and those graduates of foreign medical schools who entered the country in large numbers prior to the restrictions placed on their entry with the passage of PL94-484 in 1975. The group of physicians under 36 years of age decreased in size. The changing age structure of the physician population can also affect such measures as average physician income, reported below, because of the life cycle effects that are known to be an important feature of career development. Thus, as the large 36-45 year-old group gets older, they will achieve their peak earning potential and raise measured average income reported from SMS. The average physician will be older and more productive and thus, earn more. However, the result should be understood as a function of the changing composition of the physician population.

The changing specialty composition in the SMS population differs slightly from the overall physician population. SMS respondents in 1988 are somewhat less likely to be in general/family practice, surgery, and pathology than their 1982 counterparts, although these differences are not statistically significant. Many of these changes mirror those reported from Masterfile analyses.

In previous work, Marder and Zuckerman (1985) noted that solo practice had not declined during the 1970s as rapidly as had been predicted. That study utilized data compiled through 1980. The composition of the SMS population adds considerable weight to this finding. As shown in Table 2, the proportion of nonfederal patient care physicians in solo practice declined from 45.6% to 38.5% during the period of this study. The difference is statistically significant; however, the real change in this series occurred between 1982 and 1983 and between 1987 and 1988. Nonetheless, it is clear from this nationally representative data set that solo practice is hardly a disappearing phenomenon.

Further evidence that supports the continued importance of solo practice has been compiled. In an analysis of SMS and PSP data collected between 1975 and 1987, Willke and Cotter (forthcoming) found that the percent in solo practice had remained stable overall and for three experience/age categories of physicians. These include physicians less than 40 years of age with 2-6 years of experience out of residency (young physicians), physicians 40 years or older with more than 6 but less than 26 years of experience (prime physicians), and physicians with at least 26 years of experience (senior physicians). Their result, that 35 percent of young physicians are in solo practice, will surprise many. The fact that this proportion has not changed in 10 years will surprise even more.

The changing geographic distribution of the physician population is well known from the work of Newhouse et al., (May 1982, October 1982, and Autumn 1982). They document the diffusion of board-certified specialists to smaller cities and rural areas during the 1970s. The geographic distribution of SMS respondents changed very little during 1982-88.

Physician Practice Characteristics and Trends

SMS collects information on several different indicators of medical practice. Table 3 summarizes key findings from the program. Physicians are continuing to have long work weeks, cf. Freiman and Marder (1985) for an earlier comparison; and the physician work year is getting longer because fewer weeks are spent in vacation, illness, or professional conferences. The number of weeks practiced has displayed a modest upward trend for the entire sample and for most specialties. The number of hours worked per week has also increased somewhat.

Although it shows only limited change over time, there are four persistent differences among groups of physicians that are worth noting from Table 3. First, physicians in general/family practice report longer work years than average while anesthesiologists and radiologists report fewer weeks practiced. Second, graduates of foreign medical schools (FMGs) generally work longer hours per week and more weeks per year than graduates of U.S. medical schools (USMGs). Third, physicians work longer work weeks and generally more weeks per year in rural areas. Finally, female physicians increased their weeks practiced so they now work about one week less per year than males. Hours worked per week by female physicians remain at lower levels than those reported by men.

It is in the visit measures that one observes the greatest change during the 1980s. Total visits per week, not shown in the tables, declined from 129.1 to 121.1 between 1982 and 1988. The decline occurred across all specialty groups except internists. Similarly, physicians in rural, small metropolitan, and large metropolitan areas experienced a decline in the average number of patient visits per week. There

Table 3. **SMS Productivity Measures: Weeks, Hours, and Visits, 1982-1988**

	Mean Weeks Practiced Last Year			Mean Total Hours per Week in Professional Activities			Mean Number of Visits on Hospital Rounds per Week			Mean Number of Office Visits per Week		
	1982	1988	Percent Change	1982	1988	Percent Change	1982	1988	Percent Change	1982	1988	Percent Change
Overall[a]	46.4	47.1	1.4[c]	57.0	58.2	2.1[c]	32.3	24.8	–23.1[c]	80.2	79.2	–1.3
Specialty												
General/Family Practice	47.2	47.7	1.1	57.8	58.3	0.9	28.8	17.0	–40.9[c]	116.2	112.3	–3.4
Internal Medicine	46.2	47.4	2.6[c]	59.1	61.4	4.0[b]	41.1	35.5	–13.5[b]	63.4	64.9	2.3
Surgery	46.3	47.0	1.4[b]	56.5	59.2	4.7[c]	40.8	26.5	–35.2[c]	66.0	70.2	6.4
Pediatrics	46.4	47.4	2.1	56.4	57.3	1.6	24.6	21.2	–13.8	99.7	102.2	2.5
Obstetrics/Gynecology	46.5	47.1	1.3	58.3	63.4	8.7[c]	27.4	22.9	–16.4[b]	92.5	91.4	–1.2
Radiology	46.1	45.2	–2.1[c]	59.4	57.1	–3.9	—	—	—	—	—	—
Psychiatry	47.1	47.3	0.5	50.5	49.0	–3.1	—	—	—	—	—	—
Anesthesiology	45.7	45.3	–0.8	61.5	58.8	–4.4	—	—	—	—	—	—
Pathology	47.1	47.2	0.2	49.8	50.2	0.7	—	—	—	—	—	—
Sex												
Male	46.6	47.2	1.2[c]	57.3	58.7	2.5[c]	33.3	25.1	–24.6[c]	81.6	80.3	–1.6
Female	44.2	46.1	4.4[c]	53.8	53.8	0.1	19.8	22.1	11.7	64.5	70.2	8.8
Location												
Nonmetropolitan	46.8	47.3	1.0	59.9	60.9	1.6	41.7	26.6	–36.2[c]	98.6	97.1	–1.5
Metropolitan–												
Less than 1,000,000	46.6	47.0	0.9	56.6	58.3	3.0[c]	34.1	24.9	–26.9[c]	81.5	81.4	–0.1
1,000,000 and over	46.1	47.0	2.0[c]	56.3	57.2	1.7	27.1	24.1	–11.1[b]	72.1	71.1	–1.3
Type of Practice												
Solo	46.7	48.1	2.9[c]	56.5	59.1	4.5[c]	28.5	21.8	–23.4[c]	82.8	84.6	2.2
Non-solo	46.2	46.5	0.6	57.4	57.7	0.4	35.8	26.9	–25.0[c]	77.9	75.6	–3.0
Country of Medical School												
U.S.	46.4	46.9	1.1[c]	56.7	58.0	2.4[c]	32.7	25.2	–22.9[c]	82.2	81.3	–1.1
Foreign	46.6	47.8	2.6[c]	58.1	58.8	1.1	30.7	23.5	–23.6[c]	72.0	71.4	–0.8

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a. Includes specialties not listed separately.
b. Statistically significant at the p = .05 level.
c. Statistically significant at the p = .01 level.

are a number of potential explanations. Because visits are a rather nonspecific measure of output, the decline in visit rates could be consistent with a rebundling of physician services. Thus, the physician sees the patient less frequently but performs a larger number of services during any visit. An alternative explanation for the decline in average visit rates is that supply is growing faster than demand. SMS data do not provide the information necessary to choose between these theories.

One finding from the visit data that is not difficult to understand is the changing site for medical practice. As indicated in Table 3, the number of visits on hospital rounds, like the number of hours spent in the hospital, has been declining, 23.1% between 1982

Table 4. **Mean Professional Expenses (in thousands of dollars) of Self-Employed Physicians Last Year**

	1982	1983	1984	1985	1986	1987	1988	Percent Change 1982 to 1988
Overall[a]	$72.7	$78.4	$85.4	$94.0	$102.7	$118.4	$123.7	70.2%[b]
Specialty								
General/Family Practice	70.9	75.3	79.4	89.2	96.5	119.9	121.2	70.9[b]
Internal Medicine	72.5	74.9	88.5	89.7	90.0	110.5	117.8	62.5[b]
General Surgery	89.2	103.7	112.3	128.9	135.7	148.6	164.7	84.6[b]
Pediatrics	61.2	67.7	64.1	77.8	87.3	93.2	100.2	63.7[b]
Obstetrics/Gynecology	98.9	108.3	108.5	121.6	131.9	149.5	173.2	75.1[b]
Radiology	90.9	67.1	80.7	98.3	120.6	153.8	119.8	31.8
Psychiatry	28.9	36.8	40.9	39.9	48.0	46.7	49.3	70.6[b]
Anesthesiology	44.5	49.0	61.6	54.8	81.2	96.7	74.9	68.3[b]
Pathology	72.0	75.1	65.1	56.5	60.2	67.8	59.2	–17.8
Sex								
Male	74.4	79.6	87.4	96.5	105.8	121.4	126.2	69.6[b]
Female	48.4	58.4	59.8	59.5	55.9	77.3	89.0	83.9[b]
Location								
Nonmetropolitan	69.5	80.4	86.3	93.9	99.6	123.6	124.5	79.1[b]
Metropolitan–								
Less than 1,000,000	80.4	77.0	92.5	96.1	105.1	122.0	129.6	61.2[b]
1,000,000 and over	68.5	78.5	79.4	92.5	102.3	112.9	118.5	73.0[b]
Type of Practice								
Solo	70.7	72.4	77.2	85.4	90.5	100.7	110.4	56.2[b]
Non-solo	76.7	86.3	98.8	108.0	120.8	144.4	142.3	85.5[b]
Country of Medical School								
U.S.	74.0	79.4	88.6	98.0	106.3	122.6	129.0	74.3[b]
Foreign	67.4	73.5	71.8	77.6	87.4	101.4	104.3	54.7[b]

[a] Includes specialties not listed separately.
[b] Statistically significant at the p = .01 level.

and 1988. The decline in office visit rates is much less dramatic. This probably reflects the recent changes in hospital use patterns that is often attributed to the introduction by Medicare of the diagnosis-related grouping (DRG) payment methodology. DRGs may have something to do with the relatively larger decline in hospital visit rates but the similar effects reported by pediatricians suggest that the full explanation is probably a good deal more complicated than the introduction of a payment system largely affecting elderly patients.

SMS collects information on several fees charged by physicians not shown in the tables. The fee for an office visit with an established patient increased 44.4% between 1982 and 1988. For comparison, the physicians' services index of the consumer price index grew 40.6% during the same period. Fees grew faster for male physicians than for females. Fees charged by physicians in large metropolitan areas grew much faster than those reported by physicians in smaller metropolitan areas. The opportunity to be paid higher fees may explain the continuing appeal of large metropolitan areas as practice sites for new physicians, cf. Marder (1986). Finally, fees charged by solo practitioners grew faster than

Table 5 **Mean Net Income (in thousands of dollars) after Expenses but before Taxes Last Year**

	1982	1983	1984	1985	1986	1987	1988	Percent Change 1982 to 1988
Overall[a]	$89.9	$97.7	$104.1	$108.4	$112.2	$119.5	$132.3	47.2%[b]
Specialty								
General/Family Practice	71.5	71.4	66.9	71.6	77.9	80.3	91.5	28.0[b]
Internal Medicine	83.4	86.9	94.6	104.2	102.0	109.4	121.8	46.0[b]
General Surgery	114.5	128.6	144.3	151.0	155.0	162.4	187.9	64.1[b]
Pediatrics	63.5	70.5	70.8	73.7	76.2	81.8	85.3	34.3[b]
Obstetrics/Gynecology	111.0	112.3	118.1	118.8	124.3	135.9	163.2	47.0[b]
Radiology	108.0	133.3	144.3	139.7	144.3	168.8	180.7	67.3[b]
Psychiatry	70.5	75.8	79.2	85.1	87.2	91.5	102.7	45.7[b]
Anesthesiology	115.2	131.9	141.6	143.9	142.7	150.2	163.1	41.6[b]
Pathology	104.9	106.5	114.4	115.1	124.8	137.7	124.6	18.8
Sex								
Male	92.7	100.8	108.6	112.5	117.0	124.8	138.3	49.2[b]
Female	59.3	63.7	60.9	68.0	71.0	75.2	82.9	39.8[b]
Location								
Nonmetropolitan	85.5	88.6	92.7	100.9	102.7	113.0	123.7	44.7[b]
Metropolitan—								
Less than 1,000,000	96.1	103.6	110.6	115.8	117.8	125.4	142.3	48.1[b]
1,000,000 and over	86.9	96.7	103.8	106.3	111.6	117.5	127.9	47.2[b]
Type of Practice								
Solo	86.5	95.9	100.0	105.6	111.9	115.5	127.8	47.7[b]
Non-solo	92.7	98.9	107.1	110.5	112.4	122.0	135.0	45.6[b]
Country of Medical School								
U.S.	91.7	98.3	106.0	109.8	112.7	122.1	133.8	45.9[b]
Foreign	82.8	95.4	96.3	103.0	110.1	109.6	126.7	53.0[b]

a. Includes specialties not listed separately.
b. Statistically significant at the $p = .01$ level.

those reported by physicians in non-solo practice. This finding should be discounted a little because those in non-solo practice would be more likely to be associated with capitated systems such as health maintenance organizations or individual practice associations. Individuals who do not provide any services on a fee-for-service basis are not asked fee questions. As a result, only a subset of the non-solo population is included, probably those with the best practice options.

Table 4 reports results for expenses of self-employed physicians. For this group, tax deductible professional expenses rose 70.2% between 1981 and 1987; the overall inflation rate for this period was 25%. The growth rate was largest for obstetrician/gynecologists and lowest for pathologists during this period. Additional subpopulations showed differential growth in expenses: solo practitioners had smaller growth in expenses than did group practice physicians, and expenses grew faster for physicians in large metropolitan areas and nonmetropolitan areas than they did for their colleagues in the small metropolitan areas. These two trends offer scant support to the idea that subpopulations that experienced the fastest growth in expenses should experience the slowest growth in number of practitioners. Differences among the specialties in growth in total expenses may be correlated with professional liability expense growth. Overall, expenses for professional liability insurance grew from $4,800 in 1981 to $15,000 in 1987.

Table 5 reports the trend in physician income after expenses but before taxes. SMS results indicate that nonfederal patient care physicians experienced income growth that was slightly higher than the rate of inflation. The varying financial remuneration of practicing in different specialties is striking. Surgeons, whose income was highest at the start of the SMS program, were among the groups with the fastest growing income as well. General/family practitioners, pediatricians, and pathologists were among the groups with the lowest income growth. These income patterns undoubtedly influence specialty choices of young physicians. Residency programs with the smallest numbers of unfilled positions are those with the highest and fastest growing income levels.

There are persistent differences in the incomes earned by different groups of physicians. Primary care specialties are among the lower-paid groups while surgeons, radiologists, and anesthesiologists are highly paid. Women physicians earn less than men and that differential is not narrowing. Kehrer (1976), Langwell (1982), and Ohsfeldt and Culler (1986) indicate that much of this sex differential is explainable by differences in specialty and experience of male and female physicians.

SMS results indicate that physicians in small metropolitan areas have the highest income. Solo practitioners earn less than others but these differences are in pre-tax incomes. The potential tax advantages of solo practice may tend to offset this reported difference. Finally, FMGs continue to earn lower incomes than USMGs; however, the difference is narrowing somewhat.

Summary and Conclusion

The results of the first seven years of the SMS survey program show that despite two significant changes in the demographic structure of the sampling frame—the increase in female physicians and the influx of young physicians—the major indicators of the socioeconomics of medical practice have been remarkably stable. The length of the work week has been stable, and income after expenses has kept pace with inflation. There are persistent differences in the practice patterns of male and female physicians, graduates of U.S. and foreign medical schools, and between urban and rural physicians.

References

Freiman, M.P. and W.D. Marder. "Changes in the Hours Worked by Physicians, 1970-80." *American Journal of Public Health,* Vol. 74, No. 2, pp. 1348-1352, December 1984.

Glandon, G.L. and J.L. Werner. "Physicians' Practice Experience During the Decade of the 1970s." *Journal of the American Medical Association,* Vol. 244, No. 2, pp. 2514-2518, December 5, 1980.

Kehrer, B.H. "Factors Affecting the Incomes of Men and Women Physicians: An Exploratory Analysis." *Journal of Human Resources,* Vol. 11, No. 4, pp. 526-545, Fall 1976.

Langwell, K.M. "Factors Affecting the Incomes of Men and Women Physicians: Further Explorations." *Journal of Human Resources,* Vol. 17, No. 2, pp. 261-274, Spring 1982.

Marder, W.D. "Physician Mobility: The Role of Income Differentials." Paper presented at the Allied Social Science Meetings, New Orleans, December 1986.

Marder, W.D. and S. Zuckerman. "Competition and Medical Groups: A Survivor Analysis." *Journal of Health Economics,* Vol. 4, No. 2, pp. 167-176, 1985.

Newhouse, J.P., A.P. Williams, B.W. Bennett, and W.B. Schwartz. "Where Have All the Doctors Gone?" *Journal of the American Medical Association,* Vol. 247, No. 17, pp. 2392-2396, May 7, 1982.

Newhouse, J.P., A.P. Williams, W.B. Schwartz, and B.W. Bennett. "The Geographic Distribution of Physicians: Is the Conventional Wisdom Correct?" The Rand Corporation, Santa Monica, California, October 1982.

Newhouse, J.P., A.P. Williams, and B.W. Bennett. "Does the Geographical Distribution of Physicians Reflect Market Failure?" *Bell Journal of Economics,* Vol. 13, No. 2, pp. 493-505, Autumn 1982.

Ohsfeldt, R.J. and S.D. Culler, "Differences in Income Between Male and Female Physicians." *Journal of Health Economics*, Vol. 5, No. 4, pp. 335-346, December 1986.

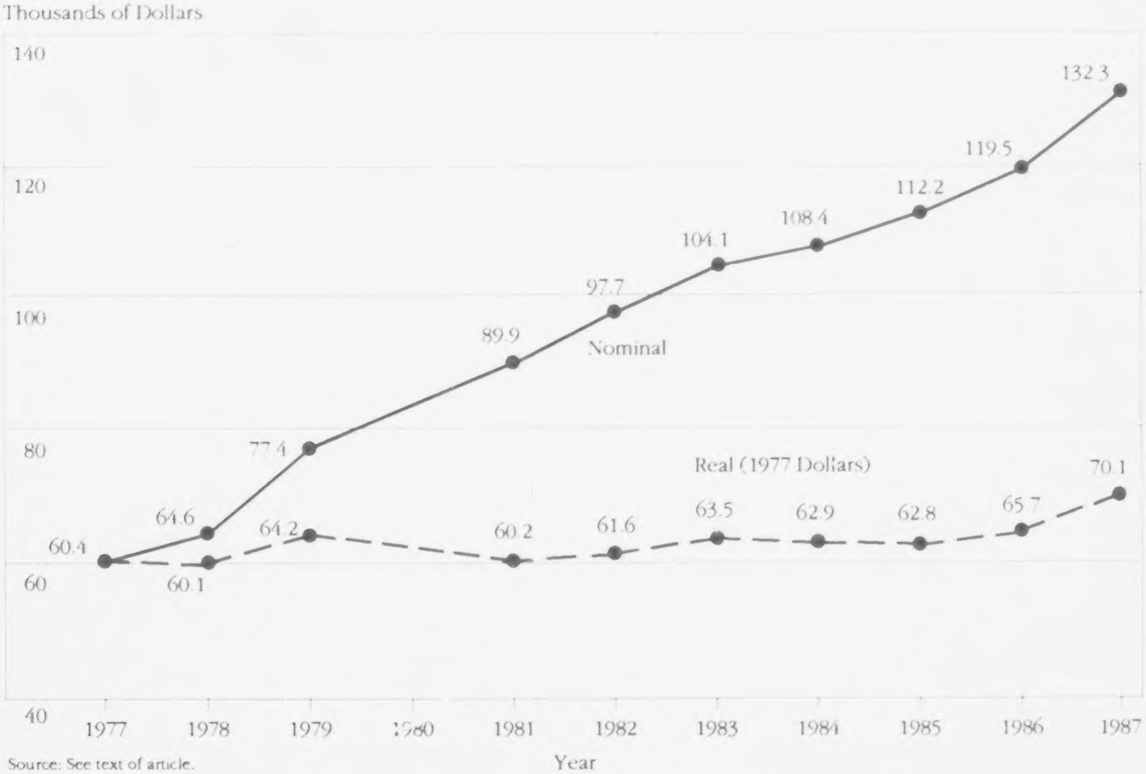
Thran, S.L., W.D. Marder, and R.J. Willke. "Probability of Response: A Multivariate Probit Analysis." *American Statistical Association 1986 Proceedings of the Section on Survey Research Methods*, pp. 435-440, 1986.

Willke, R.J. and Cotter, P.S. "Young Physicians and Changes in Medical Practice Characteristics: 1975-1987." *Inquiry*, forthcoming.

Trends, Variations, and the Distribution of Physician Earnings, 1977–1987

by Martin L. Gonzalez

Figure 1. **Average Physician Nominal and Real Net Income after Expenses before Taxes, 1977-1987**



Source: See text of article.

An important indicator of the changing economic environment of medicine is physician earnings. This paper provides an overview of trends and patterns in physician net income since 1977. Throughout the discussion, physician net income (or earnings, a term used synonymously with net income) is defined as physician income from medical practice after expenses and before taxes.

Major results of the analysis include the following:

- Average net income of physicians reached $132,300 in 1987. During the period 1977 to 1987, net income rose at a slightly higher rate than inflation.
- Half of physicians earned less than $108,000 and one-fourth earned less than $74,000 in 1987.

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- The distribution of real net income in 1987 has changed little since 1977 for the overall physician population. However, significant changes in the distribution of real net income have occurred within some specialties during this period.

Physician net income data used in this report for the years 1981-1987 are from the 1982-88 AMA Socioeconomic Monitoring System core surveys. Physician net income data for the years 1977-1979 are from the 1978-1980 AMA Periodic Surveys of Physicians. Data from individual respondents to these surveys are weighted to correct for survey nonresponse bias. Adjustments to income for the effects of inflation are based on the All Items Consumer Price Index for all urban consumers. An appendix to this paper explains the methodology for making these adjustments.

Trends in Nominal and Real Net Income

Figure 1 and Table 1 compare average nominal and average real net income of all physicians, i.e., net income unadjusted and adjusted for the effects of inflation respectively, between 1977 and 1987. Real net income is expressed in terms of the purchasing power of a dollar in 1977. Nominal net income rose at an average annual rate of 8.2% during this period. However, real net income increased at an annualized rate of 1.5%.

In 1987, the specialists with the highest nominal average earnings were surgeons, radiologists, and anesthesiologists. The lowest average earnings were experienced by pediatricians, general/family practitioners, and psychiatrists. From 1977 to 1987, the results indicate that:

- Nominal net income increased in all specialties. Surgeons, radiologists, anesthesiologists, obstetricians/gynecologists, internists, and psychiatrists also experienced an increase in real income during this period.
- Real net income declined among physicians in general/family practice and pediatrics.

Distribution of Physician Net Income 1987

Confining attention to average income can be misleading if taken as representative of typical physician earnings because of the influence of incomes at the high end of distribution. To provide a better perspective on the earnings of physicians, net incomes at the 25th, 50th (median), and 75th percentiles are presented in Table 2. Several points emerge from an examination of this information:

- Comparison of the mean to the median income indicates that a majority of physicians earn less than the average earnings level. Although average net income was $132,300 for all physicians, half of all physicians earned less than $108,000.

Table 1 **Annual Percent Change in Average Physician Net Income (in thousands of dollars) after Expenses before Taxes, 1977-1987**

	Average Net Income			Annual Percent Change	
	1977	1987 Nominal	1987 Real[a]	Nominal	Real
All Physicians[b]	$60.4	$132.3	$70.1	8.2%	1.5%
Specialty					
General/Family Practice	49.8	91.5	48.5	6.3	–0.3
Internal Medicine	60.3	121.8	64.6	7.3	0.7
Surgery	71.8	187.9	99.6	10.1	3.3
Pediatrics	45.9	85.3	45.2	6.4	–0.6
Obstetrics/Gynecology	69.7	163.2	86.5	8.9	2.2
Radiology	74.9	180.7	95.8	9.2	2.5
Psychiatry	47.5	102.7	54.4	8.0	1.4
Anesthesiology	65.9	163.1	86.4	9.5	2.8

Source: See text of article.
a. In 1977 dollars.
b. Includes physicians in specialties not listed separately.

Table 2. **Distribution of Physician Net Income (in thousands of dollars) after Expenses before Taxes, 1987**

	Mean	25th Percentile	50th Percentile	75th Percentile
All Physicians[a]	$132.3	$74.0	$108.0	$163.0
Specialty				
General/Family Practice	91.5	58.0	80.0	110.0
Internal Medicine	121.8	70.0	100.0	146.0
Surgery	187.9	102.0	153.0	230.0
Pediatrics	85.3	55.0	77.0	110.0
Obstetrics/Gynecology	163.2	100.0	145.0	195.0
Radiology	180.7	110.0	170.0	225.0
Psychiatry	102.7	73.0	90.0	116.0
Anesthesiology	163.1	115.0	150.0	200.0

Source: See text of article.
a. Includes physicians in specialties not listed separately.

- Mean net income was larger than median income in all specialties. However, the rankings of mean and median income across specialties were relatively similar. A major exception to this trend occurred for radiologists and surgeons. Surgeons had a higher mean income ($187,900 versus $180,700) but median income was higher among radiologists ($170,000 versus $153,000).
- At the lower end of the income distribution, one-fourth of physicians earned less than $74,000 in 1987. At the upper end of the distribution, one-fourth earned more than $163,000.
- Income levels at each quartile of the earnings distribution, except the 75th percentile, by specialty were highest among radiologists. Income at the 75th percentile was highest among surgeons, $230,000. The lowest income levels were found among pediatricians and general/family practitioners.

A comparison of the distribution of real net income in 1977 and 1987 provides further insight into the real earnings of physicians. Table 3 indicates physician net income levels at the 25th, 50th, and 75th percentiles in 1977 and the percent of physicians in 1987 whose real income, in 1977 dollars, fell below these levels. The results indicate that the distribution of real income changed very little in 1987 compared with 1977 for the overall physician population. Median net income in 1977 was $55,000; in other words, half of physicians earned under $55,000 in 1977. In 1987, 48.4% of physicians earned real net income below $55,000.

Larger changes in the distribution of real income occurred within specialties. The percent of physicians whose real income fell below 1977 25th, 50th, and 75th percentile levels increased among pediatricians. The percent of general/family practitioners whose real income fell below 1977 50th and 75th percentile levels increased in 1987. However, there was a decrease in the percent of general/family practitioners whose real income fell below the 1977 25th percentile level. Pediatricians experienced the largest increase in the share of physicians with earnings below the 1977 median: 57.8% of these physicians earned less in real terms in 1987 than the 1977 median net income of $45,000. General/family practitioners experienced the largest increase in the percent of physicians earning below 1977 75th percentile net income. In real terms, 81.0% of general/family practitioners fell below this level in 1987.

The percent of physicians whose real income fell below the 1977 25th, 50th, and 75th percentile levels decreased among surgeons, obstetricians/gynecologists, radiologists, psychiatrists, and anesthesiologists. The largest decline occurred among anesthesiologists. Only 25.5% of anesthesiologists had real net earnings in 1987 below the 1977 median income level of $62,000.

Summary and Conclusions

Analysis of trends in nominal and real physician net income indicates that physician income growth exceeded the rate of inflation during the period 1977-1987. During this period, nominal net income in-

Table 3. **Distribution of Physician Net Income (in thousands of dollars), after Expenses before Taxes, by Specialty, 1977 and 1987**

	1977 Income[a] at the:			Percent of Physicians with 1987 Real Income[b] below 1977 Income at the:		
	25th Pctl	50th Pctl	75th Pctl	25th Pctl	50th Pctl	75th Pctl
All Physicians[c]	$39.0	$55.0	$75.0	24.8%	48.4%	67.6%
Specialty						
General/Family Practice	30.0	46.0	64.0	22.8	56.0	81.0
Internal Medicine	40.0	57.0	75.0	30.3	54.7	73.8
Surgery	45.0	68.0	90.0	14.7	37.9	54.6
Pediatrics	30.0	45.0	60.0	28.5	57.8	77.5
Obstetrics/Gynecology	46.0	65.0	88.0	18.5	43.2	61.7
Radiology	52.0	72.0	91.0	16.3	37.1	50.6
Psychiatry	34.0	45.0	60.0	15.4	44.1	73.0
Anesthesiology	46.0	62.0	80.0	7.9	25.5	51.2

Source: See text of article.

a. In thousands of dollars.

b. Income in 1987 expressed in 1977 dollars.

c. Includes physicians in specialties not listed separately.

creased at an average annual rate of 8.2%. In real terms, the annual growth rate was 1.5%. While physician net income rose in nominal terms for all specialties, real net income declined among physicians in general/family practice and pediatrics.

Most physicians earned less than the mean income for their specialty group. Average net income for all physicians was $132,300 in 1987; however, half of physicians earned less than $108,000.

A comparison of the distribution of real net income in 1977 and 1987 shows that the distribution of real earnings among all physicians changed very little from 1977 to 1987. However, changes did occur within specialties. Surgeons, radiologists, anesthesiologists, obstetricians/gynecologists, and psychiatrists did better, in real terms, in 1987 than in 1977. In contrast, general/family practice physicians, internists, and pediatricians did worse than in 1977.

Appendix: Methodology for Computing Real Income

In the preceding article, 1987 nominal net income figures were converted to real net income figures in order to control for the effects of inflation that occurred during the period 1977 to 1987. In this instance, real net income figures were expressed in terms of the purchasing power of a dollar in 1977. However, it is also possible to express real net income in terms of the purchasing power of a dollar in 1970 or any other year. This can be done using the figures from the All Items Consumer Price Index (CPI) that are presented in Table 4. The basic formula for converting dollars in one year to a number that expresses their purchasing power in another year is as follows:

Table 4. **Consumer Price Index 1970 to 1987[a]**

Year	CPI	Year	CPI
1970	38.8	1979	72.6
1971	40.5	1980	82.4
1972	41.8	1981	90.9
1973	44.4	1982	96.5
1974	49.3	1983	99.6
1975	53.8	1984	103.9
1976	56.9	1985	107.6
1977	60.6	1986	109.6
1978	65.2	1987	113.6

Source: Bureau of Labor Statistics All Items Consumer Price Index for all urban consumers.

a. Base year 1982-1984 = 100.

Real dollars in year i = $\frac{CPI_i}{CPI_j}$ x Nominal dollars in year j.

where CPI_i = The Consumer Price Index for the year in which the real dollars will be expressed (year i).

and CPI_j = The Consumer Price Index for the year in which the nominal dollars are expressed (year j).

For example, the following formula was used to convert 1987 nominal net income to real net income in 1977 dollars:

$$\text{Real net income} = \frac{CPI_{1977}}{CPI_{1987}} \times \text{1987 Nominal net income}$$

$$= \frac{60.6}{113.6} \times \$132{,}300$$

$$= 0.53 \times 132{,}300$$

$$= \$70{,}100.$$

The interpretation of this result is that just under half of the increase in nominal net income was due to inflation during the period 1977 to 1987.

The Bureau of Labor Statistics has changed the base period used to calculate the Consumer Price Index (CPI). Specifically, the index, which had been calculated using 1967 = 100 as a base period, now uses the period 1982 to 1984 = 100 as its base. All information reported in Table 4 reflects this change. The major impact of this change is that the index more accurately reflects current consumption patterns and hence is a more accurate measure of change in the cost of goods and services.

Medical Professional Liability Claims and Premiums, 1985-1987

by Eric J. Slora and Martin L. Gonzalez

Medical professional liability remains an issue of great importance for physicians and policymakers. A comparison of physicians' claim experiences in 1986 and 1987 indicates significant declines in measures of professional liability claim frequency overall during the past year. Despite these declines, professional liability insurance premiums continue to increase. In this article, trends in claim frequency and cost of insurance premiums are examined. Specific findings of the analysis include the following:

- The average annual rate of professional liability claims declined from [illegible].2 per 100 physicians in 1986 to 6.7 per 100 in 1987. The claims rate has declined at a 19.0% average annual rate since 1985.
- The claims rate moderated or declined across specialties and geographic divisions during the past year. Significant declines occurred among physicians in the New England, West North Central, and Middle Atlantic Census Divisions.
- Despite the pattern of moderation and decline in claim frequency, average professional liability insurance premiums were significantly higher, increasing from $12,800 in 1986 to $15,000 in 1987. Significant increases were experienced in four specialties, including obstetrics/gynecology. Since 1985, premiums have increased at an average annual rate of 19.5% for all physicians.
- When adjusted for inflation, about one-sixth of increased revenues of the average self-employed physicians from 1982 to 1987 were used to pay for higher premiums. This suggests the important role of professional liability in contributing to increased expenditures on physician services.

The information included in this paper is derived from 1983 to 1988 AMA Socioeconomic Monitoring System (SMS) core surveys of nonfederal patient care physicians, excluding residents. For purposes of this study, information reported by respondents to the surveys was weighted to correct for survey nonresponse. This may cause some information to differ from previously reported SMS surveys relating to medical professional liability.

Trends in Professional Liability Claims

A comparison of claims per 100 physicians in 1986 and 1987 (see Table 1) indicates that overall, physicians experienced significantly fewer claims last year. The decline, from 9.2 claims per 100 physicians in 1986 to 6.7 in 1987, represents a drop of 27.2%.

These results support the existence of a decrease in claims during the past two years. Since 1985, claims have decreased at an average annual rate of 19.0%. A decline in the rate of claims was also reported over the same time period by the St. Paul Fire and Marine Insurance Company (1988) among its physician policyholders

A pattern of moderation and decline in claim frequency marks the specialties and geographic areas. Among the specialties, none of the 1986-1987 changes was significant; however, obstetrics/gynecology did experience a significant decrease in claims over the past two years. Since 1985, claims for obstetrician/gynecologists have decreased at an average annual rate of 44.3%. Among the other specialties, claims rates appear to be leveling off if not actually declining.

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Table 1 **Annual Claims per 100 Physicians by Specialty and Census Division, 1985-1987**

	1985	1986	1987	Average Annual Rate of Change 1985-1987
All Physicians	10.2	9.2	6.7[b]	–19.0%[c]
Specialty				
General/Family Practice	5.7	7.6	5.7	0.0
Internal Medicine	6.2	5.5	4.5	–14.8
Surgery	16.8	15.8	12.7	–13.1
Pediatrics	7.2	6.8	4.5	–20.9
Obstetrics/Gynecology	25.8	13.0[a]	8.0	–44.3[c]
Radiology	12.8	11.5	8.0	–20.9
Psychiatry	2.9	4.5	1.6	–25.7
Anesthesiology	7.5	8.7	4.6	–21.7
Pathology	3.3	1.9	4.9	21.9
Other	10.4	9.1	5.9	–24.7
Census Division				
New England	7.6	10.1	4.0[b]	–27.5
Middle Atlantic	13.9	12.7	7.8[b]	–25.1[c]
East North Central	13.2	10.1	10.5	–10.8
West North Central	9.6	8.6	3.9[b]	–36.3[c]
South Atlantic	7.0	7.5	5.6	–10.6
East South Central	5.5	7.3	9.2	29.3
West South Central	12.4	8.6	6.3	–28.7[c]
Mountain	6.2	9.0	4.1	–18.7
Pacific	9.3	7.5	5.4	–23.8[c]

Source: See text of article.

a. 1985-1986 change statistically significant at the $p = .05$ level.

b. 1986-1987 change statistically significant at the $p = .05$ level.

c. Total 1985-1987 change statistically significant at the $p = .05$ level.

Across geographic areas, the pattern is similar. Physicians in three census divisions—New England, Middle Atlantic, and West North Central—experienced significantly fewer claims in 1987 than in 1986. Physicians in the other six divisions experienced no significant change during the past year, suggesting at least some moderation in claims rates in these areas. Downward trends appear to be emerging in several of the census divisions studied. Significant two-year decreases in the claims rate occurred in the Middle Atlantic, West North Central, West South Central, and Pacific Divisions.

In general, the results indicate a leveling off in the claims rate in contrast to the increases observed in the early and mid-1980s. It is unclear if this trend will continue. Even so, the claims rate is still somewhat higher than it was prior to 1981. As reported by Gonzalez (1986), the annual claims rate prior to 1981 was 3.2 per 100 physicians.

It is apparent that the incidence of liability claims is not confined to a small proportion of the physician population. As Table 2 indicates, 37.0% of all physicians have had at least one claim against them during their careers. Over one-half of all physicians in obstetrics/gynecology, 57.3%, and surgery, 50.3%, have incurred at least one claim. Across census divisions, the proportion of physicians sued is fairly similar, with physicians in the East North Central, 41.5%, and Pacific, 40.2%, reporting the highest career percentages.

In 1987, 11.0% of surgical specialists incurred a claim, the highest among specialties. Physicians in the East North Central, 8.9%, and East South Central,

Table 2. **Percent of Physicians Sued Annually (1985-1987) and in Career by Specialty and Census Division**

	Percent Sued Annually			Average Annual Rate of Change	Percent Sued in Career
	1985	1986	1987	1985-1987	as of 1987
All Physicians	8.5%	7.6%	6.0%[b]	−16.0%[c]	37.0%
Specialty					
General/Family Practice	5.5	6.3	5.1	−3.7	34.9
Internal Medicine	5.4	4.8	4.3	−10.8	28.5
Surgery	13.6	12.3	11.0	−10.1	50.3
Pediatrics	6.6	5.7	3.9	−23.1	31.7
Obstetrics/Gynecology	20.0	10.9[a]	6.7	−42.1[c]	57.3
Radiology	11.2	10.5	6.5	−23.8	40.8
Psychiatry	2.9	4.1	1.6	−25.7	20.2
Anesthesiology	7.5	8.2	4.2	−25.2	31.5
Pathology	3.3	1.9	4.9	21.9	21.3
Other	7.5	7.4	5.7	−12.8	37.4
Census Division					
New England	7.2	9.5	4.0[b]	−25.5	33.6
Middle Atlantic	11.5	9.7	6.5[b]	−24.8[c]	38.2
East North Central	10.6	8.3	8.9	−8.4	41.5
West North Central	7.2	7.8	3.5[b]	−30.3	33.5
South Atlantic	6.3	6.2	5.2	−9.1	31.8
East South Central	4.5	5.9	7.8	31.7	36.7
West South Central	10.4	7.8	6.1	−23.4[c]	38.0
Mountain	5.2	7.5	4.1	−11.2	36.2
Pacific	8.0	6.2	5.2	−19.4	40.2

Source: See text of article.
a. 1985-1986 change statistically significant at the p = .05 level.
b. 1986-1987 change statistically significant at the p = .05 level.
c. Total 1985-1987 change statistically significant at the p = .05 level.

7.8%, were more likely to have been sued in 1987 than physicians in other areas.

Trends in Professional Liability Insurance Premiums

Average professional liability insurance premiums paid by self-employed physicians from 1982 to 1987 are shown in Table 3. Premiums rose at a 20.9% annual rate during this period from $5,800 in 1982 to $15,000 in 1987. In contrast, the average annualized rate of inflation was 3.3% and total practice revenues increased by 7.7% annually over the same period. According to St. Paul Fire and Marine Insurance Company (1988), premiums for their insureds have continued to increase in spite of the claims rate decline due in part to continued growth in the average cost of claims.

The increase in premiums has been a major factor contributing to growth in expenditures on physicians' services. From 1982 to 1987, 16.1% of the average increase in revenues of self-employed physicians adjusted for inflation were devoted to higher premium expenses. The more rapid rate of increase in premiums relative to revenues has caused the share of revenues devoted to paying professional liability insurance premiums to increase from 3.1% in 1982 to 5.6% in 1987.

Table 4 presents detailed information on professional liability insurance premiums for the last three years. In contrast to the pattern of moderation and decline in claim frequency during the past year, professional liability insurance premiums increased significantly during that time, averaging $15,000 in 1987 as compared with $12,800 in 1986. Since 1985,

Table 3. **Average Professional Liability Insurance Premiums Paid and Total Practice Revenues of Self-Employed Physicians, 1982-1987**

	Insurance Premiums Paid[*]	Total Practice Revenues[*]	Premiums as Percent of Revenues
1982	$5.8	$186.0	3.1%
1983	6.9	199.3	3.5
1984	8.4	212.2	4.0
1985	10.5	226.8	4.6
1986	12.8	249.5	5.1
1987	15.0	269.5	5.6
1987 net of inflation (i.e., in 1982 dollars)	12.7	228.9	5.6
Annual Percent Increase			
1982-87	21.0%	7.7%	—
1982-87 net of inflation	17.0	4.2	—

Source: See text of article.

[*] In thousands of dollars.

Table 4. **Average Professional Liability Premiums Paid by Self-Employed Physicians, 1985-1987**

	Average Premiums (in thousands of dollars)			Average Annual Rate of Change
	1985	1986	1987	1985-1987
All Physicians	$10.5	$12.8[a]	$15.0[b]	19.5%[c]
Specialty				
General/Family Practice	6.8	7.3	8.9	14.4[c]
Internal Medicine	5.8	7.1[a]	8.4[b]	20.3[c]
Surgery	16.6	21.3[a]	24.5[b]	21.5[c]
Pediatrics	4.7	6.3[a]	7.1	22.9[c]
Obstetrics/Gynecology	23.5	29.3[a]	35.3[b]	22.6[c]
Radiology	8.9	10.4	9.5	3.3
Psychiatry	2.5	3.4[a]	3.8	23.3[c]
Anesthesiology	17.9	20.5[a]	22.9	13.1[c]
Pathology	3.1	4.4[a]	6.2[b]	41.4[c]
Other	6.0	8.5[a]	8.4	18.3[c]

Source: See text of article.

a. 1985-1986 change statistically significant at the p = .05 level.

b. 1986-1987 change statistically significant at the p = .05 level.

c. Total 1985-1987 change statistically significant at the p = .05 level.

premiums have increased at an average annual rate of 19.5%.

Among specialties, there is some variation in average premium levels. These variations tend to reflect differences in claims rates. The correspondence, however, is not complete since premiums are affected by the severity of claims and other factors in addition to claims rates.

Specialists in obstetrics/gynecology paid, on average, the highest professional liability insurance premiums in 1987, $35,300, while psychiatrists paid the lowest, $3,800. Across specialties, premiums were significantly higher in 1987 than in 1986, for practitioners in pathology, obstetrics/gynecology, internal medicine, and surgery. In general, the 1985-1987 results also offer evidence that insurance premiums are on an upward trend. Since 1985, average premiums have increased at an average annual rate of 19.5%. Across specialties, the average annual rate of increase since 1985 ranges from 3.3% for radiology to 41.4% for pathology.

Premiums also varied by geographical area, type of practice, location, and physician age. Table 40, located in the Detailed Statistics section, provides full breakdowns by these variables.

References

Gonzalez, Martin L. "Trends in Physicians' Professional Liability Claims and Insurance Premiums." *Socioeconomic Characteristics of Medical Practice 1986*. Chicago: American Medical Association, 1986.

St. Paul Fire and Marine Insurance Company. *Physicians and Surgeons Update: The St. Paul's 1988 Annual Report to Physicians and Surgeons*. St Paul, Minnesota, July 1988.

Physician Decisions in Medicare's Participation Program, 1984-1988

by James W. Moser, Myer A. Blank, and Martin L. Gonzalez

In an effort to contain the growth rate of Medicare beneficiaries' out-of-pocket costs for physician services, Congress in 1984 enacted legislation creating the Medicare Participating Physician Program. This program, along with selective controls on payments per unit of service, altered the economic incentives for physicians with Medicare patients. The success of the program is usually measured by the rate of participation; i.e., the percentage of physicians with Medicare patients who sign participation agreements.

Physicians have had several opportunities since 1984 to choose whether to participate or not. This paper reports participation rates for each sign-up period by several sociodemographic categories. In addition, we report propensities to maintain or switch participation status by exploiting a reinterview feature of AMA's Socioeconomic Monitoring System. Our findings may be summarized as follows:

- In 1988, over half of all physicians interviewed, 52.6%, participated in Medicare's Participating Physician Program.
- Since declining sharply in the second year of the program, participation rates have increased steadily.
- Physicians who were participants in a given period have become more likely to remain participants in the next period over time.
- Those who were nonparticipants in one period have become less likely to elect nonparticipation in the next period over time.
- Participation is most popular among specialists, males, foreign medical graduates, physicians in the Northeast, and physicians with less practice experience.

Overview of Medicare

The Medicare program was signed into law in 1965. Its primary goal is to create a federal financing system to ensure affordable access to mainstream health care for the nation's elderly[1]. The provision of hospital and physician services is split into two separate programs with their own financing and payment arrangements. Part A covers mainly hospital services and Part B covers primarily physician services.

The Part B program is structured along the lines of existing health insurance plans. Enrollment is voluntary and involves payment of a monthly premium, currently $27.90, and an annual deductible of $75.00. Furthermore, beneficiaries are responsible for 20 percent coinsurance on allowed charges[2].

Medicare determines the allowed charge for a service as the lowest of three fee screens: the physician's actual charge; the physician's "customary" charge (the median actual charge in previous year); and the "prevailing" charge in the locality, adjusted by the Medicare Economic Index (MEI)[3]. Once the allowed charge is determined, Medicare's reimbursement is calculated by subtracting any deductible still owed and the 20 percent beneficiary coinsurance.

Two options are available to physicians for billing and reimbursement. A physician may agree to accept a claim for a service "on assignment" by billing Medicare directly and accepting the Medicare-determined allowed charge as payment in full. Alternatively, the physician may bill the patient for the service and make the patient responsible for submitting the claim to Medicare for reimbursement. Patient liability will be greater when assignment is not accepted if the physician's actual charge exceeds the allowed amount. The patient is responsible for the

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Table 1. **Summary of Legislative Provisions on Medicare Participating Physicians Program, 1984-87**

Act (Year)	Provision
Deficit Reduction Act (DEFRA), 1984	Beginning 7/1/84, froze customary and prevailing charges at 1984 levels. Created MPP, beginning 10/1/84, freezing charges for nonparticipants through 9/30/85.
Emergency Extension Act, 1985, and related legislation	Extended DEFRA freezes from 10/1/85 through 3/15/86.
Consolidated Omnibus Budget Reconciliation Act (COBRA), 1985	Extended freezes through 12/31/86, except for allowing increase in MEI for participants on 5/1/86.
Omnibus Budget Reconciliation Act (OBRA), 1986	On 1/1/87, allowed MEI update for participants, but constrained prevailing charges for nonparticipants. Created MAACs (limits on actual charges) for nonparticipants. Established charge limits based on "inherent reasonableness" authority with greater constraints for nonparticipants.
Omnibus Budget Reconciliation Act (OBRA), 1987	On 1/1/88, allowed higher MEI update for participants than for nonparticipants.Continued MAAC for nonparticipants. Continued "inherent reasonableness" limits on charges.

difference, which is sometimes referred to as "balance billing."[4]

Medicare Participating Physician Program

In an effort to contain rapidly escalating costs, Congress created the Medicare Participating Physician Program (MPP) as part of the Deficit Reduction Act (DEFRA) of 1984. Participants of MPP are physicians who sign agreements to accept all Medicare claims on assignment for one year, while nonparticipants are permitted to continue to accept assignment on a claim-by-claim basis as before. In the same year, DEFRA froze customary, prevailing, and allowed charges. To encourage participation, DEFRA also froze actual charges that could be submitted to Medicare by nonparticipating physicians. This had the effect of reducing balance billing during the freeze period and holding down future increases in customary and prevailing charge profiles for nonparticipants. Finally, the MPP offered certain nonmonetary benefits to participants, including publication of their names in directories and dissemination of their names by toll-free telephone lines, and enhanced carrier capacity to receive claims submitted electronically.

Subsequent to DEFRA, new legislation extended the fee freeze and provided for additional distinctions between participants and nonparticipants. Table 1 summarizes the provisions. In general, customary and prevailing charge screens and actual charges for nonparticipants were frozen from 1984 through 1986. On January 1, 1987, all remaining freezes were lifted, but nonparticipants' actual charges were constrained by Maximum Allowable Actual Charge (MAAC) limitations and their prevailing charges were held to a fraction of those of participants[5]. It is apparent from these actions that Congress and the Health Care Financing Administration (HCFA) have attempted to enhance the monetary benefit associated with participation over the 1984 to 1988 period.

Data Source

Data used in this study were obtained from the 1984 through 1988 Socioeconomic Monitoring System (SMS) core surveys. Each of these surveys consists of two subsamples. The larger subsample, roughly 2,800 respondents, consists of physicians interviewed for the first time. The smaller subsample represents reinterviews of physicians who were interviewed in the previous year. This study focuses on those physicians reinterviewed. By matching individual physician responses in a reinterview with their responses in the initial interview, a two-period panel may be constructed. Moreover, because four surveys are used, a time-series of three such panels is available: 1985-86, 1986-87, and 1987-88. No physician appears in more than one panel. However, the availability of individual information for both the current and the previous period permits analysis of

Table 2. **Medicare Participating Physician Rates, 1984-88**

Participation Period	Percent of Physicians Participating	
	SMS[a]	HCFA[b]
October '84–September '85	51.9%	30.4%
October '85–April '86	42.4	28.4
May '86–December '86	42.4	28.3
January '87–December '87	45.4	30.6
January '88–December '88	52.6	37.3

Source: American Medical Association, Socioeconomic Monitoring System; Health Care Financing Administration.

a. Based on a random sample of nonfederal, nonresident, patient care physicians.

b. Physician base includes allopathic and osteopathic physicians, chiropractors, podiatrists, optometrists, and oral surgeons, as well as federal, nonpatient care, and resident physicians.

participation decisions and factors related to those decisions heretofore unavailable.

Results

Since 1984, physicians have had several opportunities to join MPP. Results on overall participation rates are from the AMA's SMS 1984-1988 core surveys. Participation rates from HCFA and SMS are presented in Table 2 for comparison purposes. Figures from the two sources differ largely because they represent rates for different physician populations (see footnotes to Table 2).

In 1988, over half of all physicians interviewed, 52.6%, participated in the MPP program, as shown in Table 3. Participation dropped sharply after the first year from 51.9% to 42.4%, perhaps reflecting an initial disenchantment with MPP and then gradually increased to 45.4% in 1987 and 52.6% in 1988. The increases between 1986 and 1988 were likely due to legislation and HCFA administrative decisions that occurred during the time period, which increasingly favored participation.

Table 3 also presents participation rates by specialty classification, geographic region, years in practice, sex, and country of medical graduation. Most of the categories in these breakdowns follow the pattern of physicians overall: a drop after 1985 and then a gradual increase to the high realized in 1988. The figures indicate that:

- Other specialties (see Appendix D for the list of specialties in this category) had the highest participation rate, 56.0% in 1988.
- General/family practice physicians experienced the largest decrease in participation after the first year and had not regained their original participation rate by 1988. In 1988, 46.5% of general/family practice physicians participated, the lowest rate among all specialty categories.
- Physicians in the Northeast had the highest participation rate in 1988, 57.6%. The three other regions had relatively similar participation rates.
- Physicians with 11-20 and 1-10 years of experience had participation rates of 55.7% and 54.8%, respectively, in 1988. Both rates were higher than rates for more experienced physicians.
- Male physicians participated more than female physicians, but the differential narrowed over time.
- A higher percentage of foreign medical graduates than U.S. medical graduates participated in every year.

Table 4 presents data on physicians' decisions to maintain their current participation status from one year to the next. Three samples of physicians were analyzed. The first sample included physicians first surveyed in 1985 and resurveyed in 1986. The second sample included those first surveyed in 1986 and resurveyed in 1987, and the third sample was composed of physicians first surveyed in 1987 and resurveyed in 1988. Individual physicians were not included in more than one sample.

A trend is evident in this reinterview time series. The percentage of physicians who did not participate in the program at the time of their first interview, but decided to participate before their reinterview in the next year, increased over time. The trend is illustrated by the fact that 6.1% of physicians interviewed in 1985 and reinterviewed in 1986 indicated that their participation status had changed from nonparticipating to participating. On the other hand, 13.2% of this sample indicated that their status had switched from participating to nonparticipating. In comparison, 10.3% of physicians interviewed in 1987 and reinterviewed in 1988 indicated that their participation status had changed from nonparticipating to participating. In addition, only 4.1% of this sample indicated they had changed their status from participating to nonparticipating. Thus, over time, physicians who signed agreements during their first interview became more likely to stay in the program,

Table 3. **Mean Participation Rate by Year and Selected Characteristics, 1985-1988**

	1985	1986	1987	1988
All Physicians	51.9%	42.4%	45.4%	52.6%
Specialty				
General/Family Practice	48.7	36.9	40.4	46.5
Medical Specialties	50.8	40.9	47.3	52.1
Surgical Specialties	50.7	40.5	44.2	54.3
Other Specialties	56.4	49.8	49.0	56.0
Region				
Northeast	57.8	52.2	55.0	57.6
North Central	51.5	39.9	44.5	50.8
South	49.1	40.2	42.1	51.4
West	50.6	38.5	41.3	50.9
Years in Practice				
1-10	58.1	44.6	49.1	54.8
11-20	51.3	44.2	47.2	55.7
21-30	49.1	38.8	41.6	48.4
31 or more	47.5	39.0	38.1	45.8
Sex				
Male	61.2	54.5	52.1	58.3
Female	51.2	41.4	44.9	52.1
Education				
Foreign Medical Graduate	61.2	52.7	58.1	65.2
U.S. Medical Graduate	49.4	39.9	42.3	49.2

Source: See text of article.
NOTE: All interyear and intracategory differences are statistically significant at the $p = .05$ level according to a chi square test, with the exception of (1) Northeast and (2) male across years, and (3) between sexes for 1988.

while those who had not signed up initially tended to join the program before their second interview.

Conclusion

Our data show that Medicare participation has become more prevalent over time, suggesting the success of attempts by Congress and HCFA to make participation increasingly attractive relative to nonparticipation. Nevertheless, this conclusion is offered cautiously because of problems with the timing of participation decisions relative to the SMS survey field period. For example, in 1986 the deadline for making the decision was April 30, a date after which some physicians had been interviewed. Another problem may be presented because the sign-up deadline was either just before (in 1987) or well before (in 1984 and 1985) the beginning of the survey period. An additional potential problem is a slight variation in the wording of the survey question that may have caused participation responses to be biased upward in the first year or two. Finally, it should be noted that we have not examined the data using multivariate analysis controlling for the presence of other factors that may have influenced physicians' participation decisions.

Table 4. **Initial and Reinterview Participation Rates by Panel**

Physician is Participating				
Initial Interview	Reinterview	1985-86	1986-87	1987-88
No	No	40.5% (86.9)	48.8% (83.5)	44.9% (81.3)
No	Yes	6.1 (13.1)	9.6 (16.5)	10.3 (18.7)
Yes	No	13.2 (24.7)	6.1 (14.7)	4.1 (9.1)
Yes	Yes	40.2 (75.3)	35.4 (85.3)	40.7 (90.9)

Source: See text of article.

NOTE: Top figure in each cell represents the proportion of the total panel population falling into a particular category. The parenthesized figure is the proportion of the relevant subpopulation, identified by a given initial interview decision, making a particular reinterview choice. For example, among all persons initially interviewed in 1985 and reinterviewed in 1986, 40.5% made "no" decisions in both years; furthermore, 86.9% of persons who chose "no" initially also chose "no" subsequently.

Footnotes

1. In addition to persons age 65 and over, disabled persons and patients with end-stage renal disease were made eligible for Medicare in 1974. The elderly constitute roughly 90 percent of the enrolled population.
2. Premiums and beneficiary copayments do not fund the entire Part B program. The federal government contributes general revenues, which account for about three-fourths of the amount required to cover the program's actuarial costs and to provide a trust fund.
3. The prevailing charge is defined as a prespecified percentile, currently the 75th, of customary charges by all physicians providing the service in the locality in the previous year. There are roughly 240 charge localities in the United States. There is actually a fourth charge screen: the 1973 prevailing charge updated by a cumulative Medicare Economic Index (MEI), which is intended to capture changes in physicians' practice costs and incomes.
4. Patient out-of-pocket cost will be less than liability if he or she qualifies for state Medicaid programs or if private "medigap" insurance covering deductibles, copayment, and balance billing amounts has been purchased.
5. Maximum Allowable Actual Charges (MAAC) are fee controls that limit actual charges of nonparticipants to a percentage markup above 1987 prevailing charges. The 1986 Omnibus Budget Reduction Act (OBRA) limited prevailing charges for nonparticipating physicians to 96 percent of that for participating physicians.

Socioeconomic
Characteristics of
Medical Practice
1988

Detailed Statistics

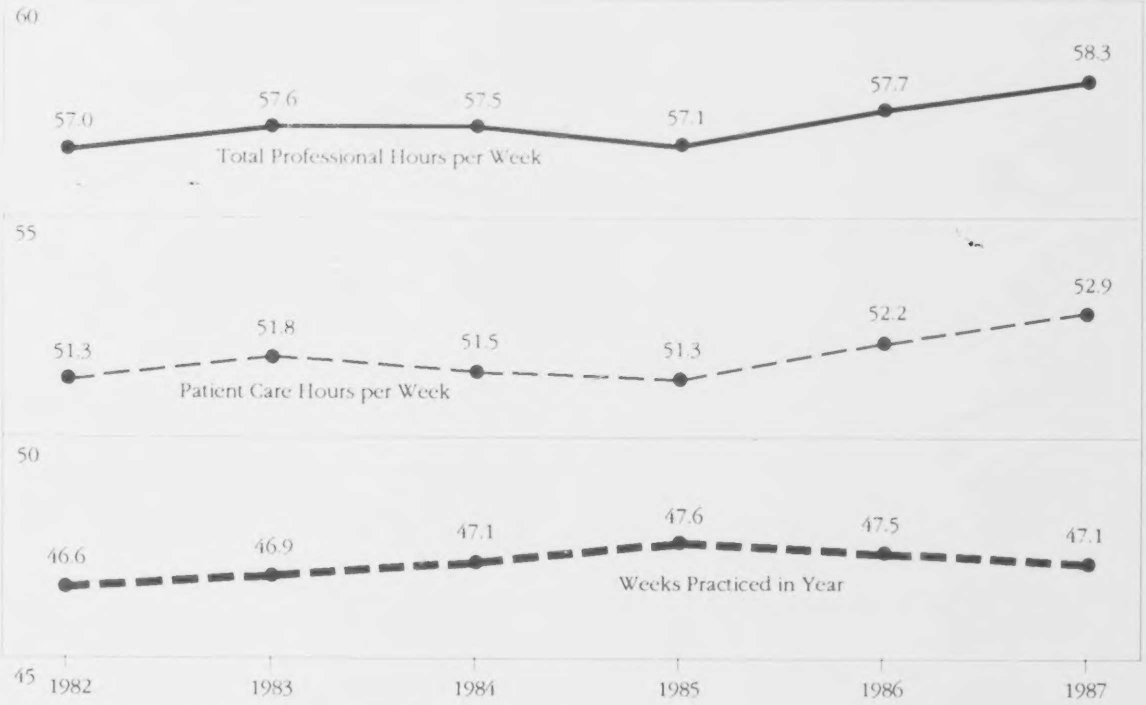
Weeks and Hours of Practice
Utilization of Physician Services
Hospital Utilization by Physicians
Fees for Physician Visits
Professional Expenses of Physicians
Physician Net Income after Expenses before Taxes

Weeks and Hours of Practice

The time spent in practice by physicians is measured in weeks per year and hours per week. Three measures of total hours in practice can be distinguished. Total professional hours combines hours in patient care with those in other professional activities, such as teaching, research, and administration. Hours in patient care activities excludes other professional hours. Direct patient care hours includes only time spent directly seeing patients; time spent in patient-related activities, such as interpreting tests and telephone contacts with patients and their families, is excluded. Direct patient care hours are allocated by activity into hours spent seeing patients in the office, on hospital rounds, in surgery (operating and delivery rooms), and in other settings.

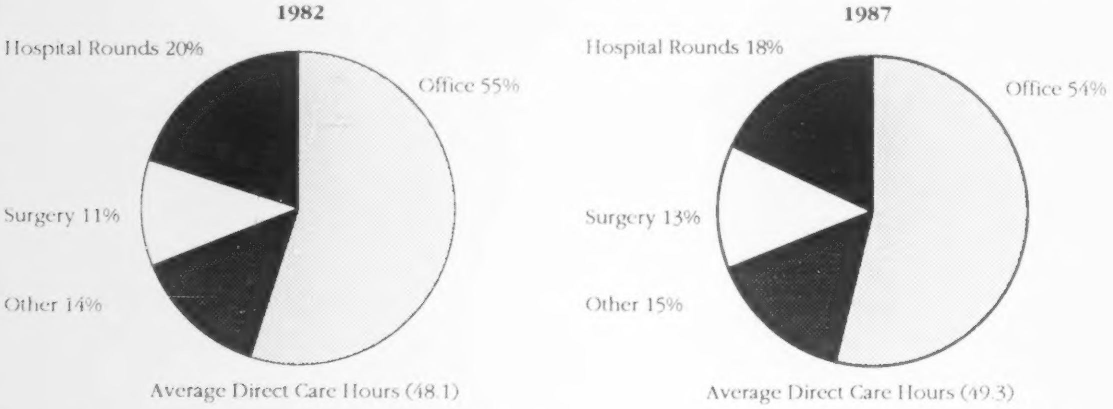
Figures 1 and 2 indicate that average weeks of practice per year, hours per week, and the allocation of direct patient care hours by activity were relatively stable from 1982 to 1987. Significant variations in average direct patient care hours and their allocation in 1987 by specialty are shown in Figure 3.

Figure 1. **Average Weeks and Hours per Week of Practice by All Physicians, 1982-1987**



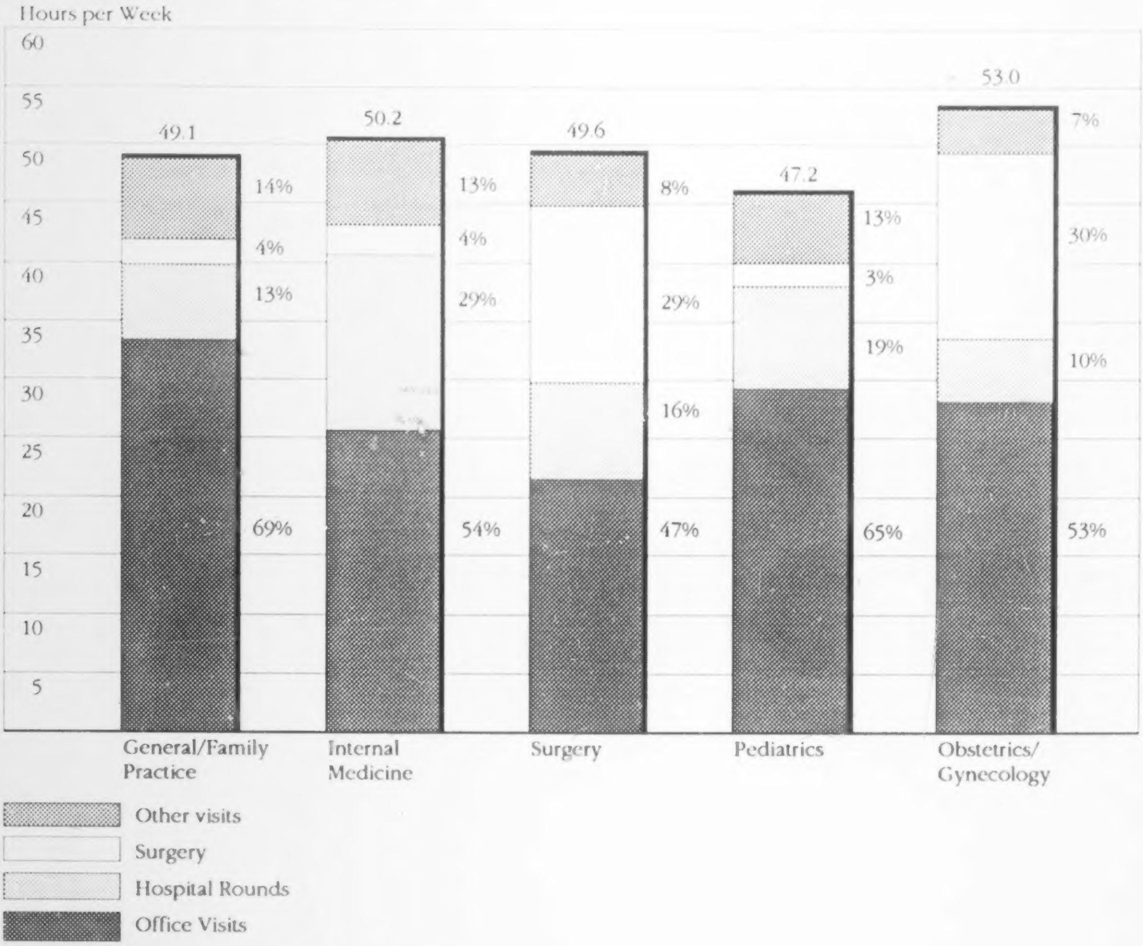
Source: AMA Socioeconomic Monitoring System 1982-1987 core surveys.

Figure 2. **Distribution of Average Direct Patient Care Hours per Week of All Physicians, 1982 and 1987**[a]



Source: AMA Socioeconomic Monitoring System 1982 and 1987 core surveys.
a. Excludes physicians in psychiatry, radiology, anesthesiology, and pathology.

Figure 3. **Distribution of Average Direct Patient Care Hours per Week by Specialty, 1987**[a]



Source: AMA Socioeconomic Monitoring System 1987 core survey.
a. Excludes physicians in psychiatry, radiology, anesthesiology, and pathology.

Table 1. **Mean Number of Weeks Practiced, 1987**[a]

	All Physicians[b]	Specialty								
		GP/FP	Int Med	Surg	Ped	Ob/Gyn	Rad	Psych	Anes	Path
All Physicians	47.1	47.7	47.4	47.0	47.4	47.1	45.2	47.3	45.3	47.2
Census Division										
New England	46.1	47.3	46.0	47.1	.	.	.	44.7	.	.
Middle Atlantic	47.1	48.5	47.2	46.7	46.7	47.8	45.3	47.7	45.7	.
East North Central	46.9	47.3	47.2	46.5	48.0	46.4	45.2	47.3	45.5	47.1
West North Central	46.9	47.5	47.3	47.7	.	.	.	.	.	.
South Atlantic	47.5	48.0	48.1	47.1	48.0	48.5	44.5	48.0	44.0	47.3
East South Central	47.4	47.5	48.9	47.3	.	.	.	.	.	.
West South Central	47.5	47.7	47.7	47.2	48.0	46.9	47.1	47.6	.	.
Mountain	46.8	47.6	47.8	46.5	.	.	.	.	.	.
Pacific	47.0	47.6	47.4	47.1	47.6	47.6	44.9	47.9	44.7	.
Type of Practice										
Solo	48.1	48.5	48.2	47.8	48.5	48.5	48.2	47.6	45.1	.
Non-solo	46.5	47.1	47.0	46.2	46.8	45.8	44.9	46.9	45.4	47.0
Location										
Nonmetropolitan	47.4	47.7	48.2	46.9	48.1	48.8	47.0	.	.	.
Metropolitan—										
Less than 1,000,000	47.1	47.5	47.6	46.8	47.1	46.7	44.9	47.6	46.0	47.1
1,000,000 and over	47.0	48.0	47.2	47.2	47.4	47.3	45.2	47.1	45.2	47.1
Employment Status										
Self-employed	47.5	48.0	47.8	47.4	47.9	47.8	45.5	47.6	45.0	47.1
Employee	46.0	46.7	46.2	44.8	46.5	42.8	44.6	46.7	45.9	47.3
Physician Age										
Less than 36 years	44.3	45.5	45.0	42.9	44.8	39.2	43.7	.	44.3	.
36-45 years	47.5	47.9	48.0	47.4	48.2	47.8	44.7	47.0	45.7	47.1
46-55 years	47.3	48.1	47.8	47.2	47.9	48.0	45.1	47.6	45.4	47.3
56-65 years	47.5	48.5	47.5	47.1	46.8	47.8	46.7	48.1	45.2	47.7
66 or more years	47.5	47.8	47.9	47.6	.	.	.	46.7	.	.

Source: 1988 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

b. Includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 1 (continued). **Standard Error of the Mean Number of Weeks Practiced, 1987[a]**

		Specialty								
	All Physicians[b]	GP/FP	Int Med	Surg	Ped	Ob/Gyn	Rad	Psych	Anes	Path
All Physicians	0.07	0.18	0.17	0.14	0.24	0.27	0.28	0.26	0.33	0.20
Census Division										
New England	0.40	0.47	1.06	0.30	.	.	.	2.10	.	.
Middle Atlantic	0.18	0.30	0.42	0.38	0.52	0.39	1.33	0.25	0.85	.
East North Central	0.17	0.37	0.49	0.42	0.24	0.63	0.65	0.36	0.51	0.34
West North Central	0.27	0.40	0.37	0.41	.	.	.	.	.	.
South Atlantic	0.15	0.48	0.22	0.31	0.56	0.41	0.70	0.23	1.29	0.38
East South Central	0.33	0.96	0.40	0.60	.	.	.	.	.	.
West South Central	0.23	0.60	0.75	0.52	0.40	0.94	0.46	0.40	.	.
Mountain	0.36	0.83	0.68	0.77	.	.	.	.	.	.
Pacific	0.19	0.61	0.38	0.27	0.34	0.32	0.43	0.40	0.81	.
Type of Practice										
Solo	0.08	0.22	0.21	0.16	0.27	0.18	0.44	0.20	0.62	.
Non-solo	0.10	0.27	0.25	0.22	0.32	0.46	0.30	0.54	0.39	0.20
Location										
Nonmetropolitan	0.23	0.38	0.34	0.56	0.40	0.46	0.42	.	.	.
Metropolitan—										
Less than 1,000,000	0.11	0.31	0.27	0.23	0.43	0.50	0.39	0.23	0.31	0.27
1,000,000 and over	0.11	0.28	0.25	0.19	0.31	0.32	0.45	0.41	0.43	0.32
Employment Status										
Self-employed	0.06	0.19	0.14	0.11	0.22	0.18	0.21	0.18	0.45	0.31
Employee	0.20	0.45	0.55	0.66	0.53	1.47	0.62	0.67	0.45	0.27
Physician Age										
Less than 36 years	0.37	0.64	0.84	1.14	1.15	1.87	1.11	.	0.79	.
36-45 years	0.10	0.28	0.20	0.18	0.19	0.19	0.56	0.53	0.67	0.32
46-55 years	0.08	0.23	0.19	0.16	0.23	0.23	0.31	0.27	0.39	0.33
56-65 years	0.11	0.19	0.23	0.22	0.57	0.33	0.56	0.23	0.62	0.48
66 or more years	0.23	0.62	0.40	0.41	.	.	.	0.47	.	.

Table 2. **Mean Number of Weeks Practiced per Year, 1978-79, 1981-87**[a]

	1978	1979	1981	1982	1983	1984	1985	1986	1987
All Physicians	47.3	46.7	46.4	46.6	46.9	47.1	47.6	47.5	47.1
Specialty									
General/Family Practice	47.6	47.2	47.2	46.9	47.2	47.6	48.5	48.3	47.7
Internal Medicine	47.2	46.5	46.2	46.7	47.0	47.2	47.8	47.9	47.4
Surgery	47.1	46.5	46.3	46.2	46.9	47.3	47.3	47.1	47.0
Pediatrics	48.1	46.7	46.4	47.2	47.2	47.4	48.0	47.8	47.4
Obstetrics/Gynecology	48.0	47.4	46.5	46.9	47.1	46.9	48.0	47.6	47.1
Radiology	46.5	46.5	46.1	46.2	45.4	45.4	45.4	45.6	45.2
Psychiatry	47.6	46.6	47.1	47.2	47.0	47.1	47.6	47.6	47.3
Anesthesiology	45.4	46.6	45.7	46.1	45.4	45.6	46.4	46.3	45.3
Census Division									
New England	46.8	46.6	46.2	45.9	46.6	47.4	47.0	46.8	46.1
Middle Atlantic	47.3	46.5	46.4	46.7	46.9	46.5	47.7	47.2	47.1
East North Central	47.1	46.4	46.0	46.8	46.6	47.0	47.2	47.2	46.9
West North Central	47.3	47.1	45.9	46.4	45.9	47.3	47.3	47.5	46.9
South Atlantic	47.8	47.3	47.1	46.9	47.0	47.2	47.9	48.0	47.5
East South Central	47.9	47.2	47.0	47.8	48.2	47.6	48.2	48.1	47.4
West South Central	48.0	47.3	47.2	46.5	47.6	47.7	48.2	48.0	47.5
Mountain	47.0	47.0	46.5	46.1	46.2	47.1	47.7	47.3	46.8
Pacific	47.1	46.2	45.8	46.3	46.8	47.1	47.4	47.2	47.0
Type of Practice									
Solo	47.6	47.2	46.7	47.0	47.7	47.7	48.2	48.1	48.1
Non-solo	47.1	46.3	46.1	46.3	46.2	46.6	47.2	47.1	46.5
Location									
Nonmetropolitan	47.7	47.3	46.6	46.8	47.5	47.6	48.3	48.1	47.4
Metropolitan—									
Less than 1,000,000	47.3	47.0	46.7	46.5	46.7	47.1	47.5	47.4	47.1
1,000,000 and over	47.3	46.4	46.1	46.7	46.9	47.0	47.5	47.4	47.0
Physician Age									
Less than 36 years	45.2	43.8	44.3	44.1	44.6	45.0	48.0	47.6	44.3
36-45 years	47.6	47.1	47.0	47.0	47.2	47.5	47.6	47.6	47.5
46-55 years	47.9	47.5	47.1	47.4	47.5	47.7	47.4	47.2	47.3
56-65 years	47.7	47.0	47.0	47.1	47.6	47.4	47.4	47.4	47.5
66 or more years	47.0	46.8	46.0	46.5	46.9	46.5	47.8	47.9	47.5

Source: 1982-88, AMA Socioeconomic Monitoring System core surveys. 1979-80, AMA Periodic Surveys of Physicians. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. Data, other than in the specialty breakdown, are based on responses from physicians in all specialties. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 2 (continued). **Standard Error of the Mean Number of Weeks Practiced per Year, 1978-79, 1981-87[a]**

	1978	1979	1981	1982	1983	1984	1985	1986	1987
All Physicians	0.08	0.09	0.11	0.11	0.09	0.08	0.05	0.05	0.07
Specialty									
General/Family Practice	0.16	0.21	0.25	0.31	0.25	0.19	0.11	0.15	0.18
Internal Medicine	0.20	0.24	0.34	0.31	0.26	0.26	0.14	0.12	0.17
Surgery	0.16	0.19	0.22	0.25	0.18	0.17	0.10	0.12	0.14
Pediatrics	0.23	0.41	0.44	0.36	0.27	0.30	0.15	0.14	0.24
Obstetrics/Gynecology	0.26	0.24	0.44	0.38	0.30	0.37	0.15	0.26	0.27
Radiology	0.45	0.44	0.23	0.24	0.26	0.29	0.20	0.18	0.28
Psychiatry	0.24	0.30	0.25	0.23	0.29	0.23	0.12	0.15	0.26
Anesthesiology	0.49	0.33	0.31	0.32	0.34	0.26	0.21	0.19	0.33
Census Division									
New England	0.31	0.36	0.41	0.50	0.30	0.27	0.23	0.25	0.40
Middle Atlantic	0.16	0.22	0.26	0.26	0.23	0.25	0.11	0.15	0.18
East North Central	0.18	0.22	0.30	0.22	0.20	0.20	0.14	0.13	0.17
West North Central	0.29	0.29	0.44	0.35	0.39	0.25	0.17	0.17	0.27
South Atlantic	0.20	0.20	0.22	0.27	0.23	0.21	0.11	0.11	0.15
East South Central	0.35	0.43	0.49	0.27	0.25	0.37	0.16	0.18	0.33
West South Central	0.26	0.31	0.36	0.39	0.23	0.24	0.14	0.13	0.23
Mountain	0.36	0.40	0.35	0.47	0.48	0.39	0.19	0.25	0.36
Pacific	0.19	0.24	0.33	0.30	0.22	0.19	0.13	0.15	0.19
Type of Practice									
Solo	0.11	0.12	0.17	0.17	0.12	0.12	0.08	0.08	0.08
Non-solo	0.11	0.13	0.15	0.14	0.13	0.11	0.06	0.07	0.10
Location									
Nonmetropolitan	0.23	0.29	0.38	0.33	0.26	0.24	0.13	0.13	0.23
Metropolitan—									
Less than 1,000,000	0.12	0.13	0.15	0.16	0.13	0.13	0.08	0.08	0.11
1,000,000 and over	0.11	0.14	0.17	0.16	0.13	0.12	0.07	0.08	0.11
Physician Age									
Less than 36 years	0.42	0.45	0.45	0.46	0.38	0.37	0.14	0.17	0.37
36-45 years	0.12	0.16	0.16	0.17	0.14	0.12	0.07	0.08	0.10
46-55 years	0.11	0.14	0.16	0.15	0.11	0.11	0.10	0.12	0.08
56-65 years	0.13	0.17	0.18	0.17	0.13	0.14	0.11	0.12	0.11
66 or more years	0.23	0.22	0.39	0.30	0.30	0.29	0.20	0.16	0.23

Table 3. **Mean Number of Hours in Professional Activities per Week, 1987**[a]

		Specialty								
	All Physicians[b]	GP/FP	Int Med	Surg	Ped	Ob/Gyn	Rad	Psych	Anes	Path
All Physicians	58.3	58.2	61.3	58.2	59.8	60.9	57.2	50.4	58.8	52.9
Census Division										
New England	58.3	57.3	59.6	60.2	.		.	49.0	.	.
Middle Atlantic	55.2	52.2	59.3	54.9	55.5	55.6	54.6	55.0	58.2	46.4
East North Central	58.4	57.6	60.5	57.6	60.4	65.9	55.0	48.4	58.5	55.1
West North Central	60.3	60.4	64.6	60.6	.	.	56.0	.	.	.
South Atlantic	60.2	57.9	64.1	59.3	60.4	66.2	56.1	52.6	58.0	54.9
East South Central	60.6	59.5	69.3	57.0	.	.	.	.	.	.
West South Central	61.9	65.4	64.6	60.2	70.0	64.5	56.1	45.7	.	.
Mountain	59.1	58.2	61.0	60.8	.	.	.	.	.	.
Pacific	55.5	54.2	56.7	57.1	55.7	55.6	60.5	49.7	54.2	.
Type of Practice										
Solo	59.0	58.3	63.0	58.0	67.0	61.3	.	52.3	57.8	.
Non-solo	57.9	58.0	60.1	58.4	56.8	60.5	57.7	47.3	59.2	52.9
Location										
Nonmetropolitan	62.3	62.9	67.5	60.3	66.0	64.3	.	.	.	.
Metropolitan—										
Less than 1,000,000	59.6	57.3	62.9	59.1	61.6	63.3	60.3	49.4	59.3	55.3
1,000,000 and over	56.4	55.9	59.4	57.0	57.6	58.5	54.3	51.2	58.2	50.4
Employment Status										
Self-employed	59.8	59.6	63.4	58.2	63.7	61.6	57.9	52.5	60.1	53.3
Employee	54.5	53.4	54.9	58.6	53.7	57.8	55.9	45.4	56.0	52.5
Physician Age										
Less than 36 years	60.5	61.4	63.3	59.4	61.4	60.9	51.1	.	62.5	.
36-45 years	60.2	60.8	63.8	60.4	57.9	64.3	61.2	49.1	58.1	53.6
46-55 years	59.1	57.7	61.4	59.4	63.4	60.1	57.3	54.5	59.0	54.9
56-65 years	56.1	60.0	56.2	55.8	56.1	56.2	56.1	49.8	57.5	53.5
66 or more years	49.3	46.9	50.6	50.0	.	.	.	44.0	.	.

Source: 1987 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

b. Includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 3 (continued). **Standard Error of the Mean Number of Hours in Professional Activities per Week, 1987[a]**

		Specialty								
	All Physicians[b]	GP/FP	Int Med	Surg	Ped	Ob/Gyn	Rad	Psych	Anes	Path
All Physicians	0.28	0.74	0.72	0.57	1.04	1.07	1.02	0.91	1.09	0.84
Census Division										
New England	1.15	3.45	1.68	2.64	.	.	.	2.27	.	.
Middle Atlantic	0.68	1.94	1.51	1.58	2.10	2.75	2.22	2.36	2.72	2.88
East North Central	0.68	1.94	1.78	1.35	2.09	3.24	2.19	2.75	2.43	1.00
West North Central	0.99	1.66	2.81	2.21	.	.	2.66	.	.	.
South Atlantic	0.71	1.70	1.89	1.37	2.73	2.83	1.82	2.46	2.72	2.28
East South Central	1.20	2.55	3.67	2.86	.	.	.	.	.	.
West South Central	1.03	2.33	2.84	1.87	6.00	2.43	2.52	1.96	.	.
Mountain	1.02	2.66	4.84	1.92	.	.	.	.	.	.
Pacific	0.64	1.92	1.68	1.25	2.08	1.92	2.93	2.00	3.33	.
Type of Practice										
Solo	0.48	1.02	1.16	0.87	2.53	1.73	.	1.26	2.18	.
Non-solo	0.35	1.06	0.92	0.75	0.99	1.32	1.07	1.16	1.26	0.89
Location										
Nonmetropolitan	0.91	1.56	3.30	1.73	2.89	2.45	.	.	.	.
Metropolitan—										
Less than 1,000,000	0.44	1.10	1.14	0.92	1.87	1.60	1.60	1.60	1.59	1.13
1,000,000 and over	0.39	1.24	0.96	0.79	1.29	1.61	1.39	1.14	1.60	1.33
Employment Status										
Self-employed	0.33	0.81	0.83	0.62	1.44	1.15	1.26	1.14	1.32	0.91
Employee	0.52	1.65	1.35	1.52	1.26	2.96	1.75	1.29	1.91	1.40
Physician Age										
Less than 36 years	0.86	1.83	2.20	1.91	2.29	3.26	1.90	.	2.81	.
36-45 years	0.49	1.33	1.06	1.10	1.47	1.91	2.24	1.69	1.52	1.35
46-55 years	0.56	1.75	1.73	0.88	2.64	2.25	1.27	1.79	2.48	1.61
56-65 years	0.59	1.49	1.74	1.24	2.14	1.64	2.32	1.72	3.19	1.52
66 or more years	0.85	1.67	1.77	2.14	.	.	.	1.98	.	.

Table 4. **Mean Number of Hours in Professional Activities per Week, 1982-87**[a]

	1982	1983	1984	1985	1986	1987
All Physicians	57.0	57.6	57.5	57.1	57.7	58.3
Specialty						
General/Family Practice	57.8	58.7	57.8	58.6	57.9	58.2
Internal Medicine	59.1	60.1	59.7	58.7	60.1	61.3
Surgery	56.5	56.1	57.4	56.8	58.1	58.2
Pediatrics	56.4	58.5	56.9	56.3	58.3	59.8
Obstetrics/Gynecology	58.3	60.6	60.7	61.5	62.9	60.9
Radiology	59.4	59.5	56.1	56.2	55.9	57.2
Psychiatry	50.5	50.9	51.6	51.1	49.2	50.4
Anesthesiology	61.5	61.5	60.2	58.5	59.4	58.8
Census Division						
New England	56.4	55.8	56.1	55.7	58.0	58.3
Middle Atlantic	55.3	56.8	56.7	56.5	56.8	55.2
East North Central	57.6	59.1	58.0	56.5	57.7	58.4
West North Central	58.7	57.8	56.6	57.5	57.5	60.3
South Atlantic	58.4	56.9	57.9	57.2	58.2	60.2
East South Central	58.7	59.1	61.6	61.4	58.2	60.6
West South Central	58.0	59.9	59.6	60.1	59.2	61.9
Mountain	57.4	57.1	58.2	56.2	57.8	59.1
Pacific	55.0	56.4	55.2	55.5	56.8	55.5
Type of Practice						
Solo	56.4	57.0	57.4	57.4	57.7	59.0
Non-solo	57.6	58.0	57.5	56.8	57.6	57.9
Location						
Nonmetropolitan	60.6	59.6	60.2	59.1	60.5	62.3
Metropolitan—						
Less than 1,000,000	57.0	58.1	58.1	57.5	58.0	59.6
1,000,000 and over	56.3	56.7	56.4	56.3	56.8	56.4
Physician Age						
Less than 36 years	59.5	59.0	60.6	58.0	60.1	60.5
36-45 years	58.2	58.9	58.7	58.0	58.9	60.2
46-55 years	57.3	58.7	58.1	58.0	57.6	59.1
56-65 years	55.4	56.4	55.9	56.9	56.5	56.1
66 or more years	49.1	47.8	48.9	48.7	51.4	49.3

Source: 1982-87, AMA Socioeconomic Monitoring System core surveys. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. Data, other than in the specialty breakdown, include physicians in all specialties. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 4 (continued). **Standard Error of the Mean Number of Hours in Professional Activities per Week, 1982-87[a]**

	1982	1983	1984	1985	1986	1987
All Physicians	0.28	0.28	0.28	0.26	0.28	0.28
Specialty						
General/Family Practice	0.70	0.72	0.73	0.68	0.75	0.74
Internal Medicine	0.78	0.73	0.73	0.74	0.71	0.72
Surgery	0.55	0.55	0.61	0.58	0.67	0.57
Pediatrics	0.91	1.07	1.00	0.95	1.00	1.04
Obstetrics/Gynecology	0.98	1.10	1.03	1.10	1.12	1.07
Radiology	1.06	1.08	0.96	0.85	0.89	1.02
Psychiatry	0.83	0.88	0.90	0.83	0.87	0.91
Anesthesiology	1.21	1.22	1.21	0.88	1.10	1.09
Census Division						
New England	1.07	1.03	1.11	1.06	1.06	1.15
Middle Atlantic	0.69	0.73	0.72	0.66	0.71	0.68
East North Central	0.70	0.72	0.74	0.67	0.71	0.68
West North Central	0.92	0.98	1.07	0.98	1.01	0.99
South Atlantic	0.70	0.64	0.65	0.60	0.72	0.71
East South Central	1.22	1.27	1.23	1.20	1.31	1.20
West South Central	0.92	0.92	0.81	0.88	0.84	1.03
Mountain	1.26	1.14	1.33	1.06	1.15	1.02
Pacific	0.72	0.68	0.69	0.61	0.69	0.64
Type of Practice						
Solo	0.42	0.44	0.44	0.43	0.46	0.48
Non-solo	0.39	0.36	0.37	0.32	0.36	0.35
Location						
Nonmetropolitan	0.87	0.84	0.87	0.79	0.94	0.91
Metropolitan—						
Less than 1,000,000	0.43	0.42	0.43	0.41	0.43	0.44
1,000,000 and over	0.41	0.41	0.41	0.38	0.41	0.39
Physician Age						
Less than 36 years	0.94	0.85	0.83	0.74	0.86	0.86
36-45 years	0.48	0.48	0.49	0.43	0.44	0.49
46-55 years	0.53	0.56	0.57	0.54	0.56	0.56
56-65 years	0.62	0.59	0.59	0.58	0.69	0.59
66 or more years	0.83	0.84	0.92	0.88	0.97	0.85

Table 5. **Mean Number of Hours in Patient Care Activities per Week, 1987[a]**

		Specialty								
	All Physicians[b]	GP/FP	Int Med	Surg	Ped	Ob/Gyn	Rad	Psych	Anes	Path
All Physicians	52.9	53.7	56.0	53.0	53.6	57.0	51.4	43.9	54.0	43.6
Census Division										
New England	51.7	52.6	53.5	53.6	.	.	.	42.8	.	.
Middle Atlantic	49.8	48.2	53.2	49.7	50.9	52.0	48.3	48.3	54.3	38.7
East North Central	52.7	52.9	55.5	51.9	53.8	60.8	49.6	42.4	53.4	45.6
West North Central	55.0	55.1	59.9	54.8	.	.	50.8	.	.	.
South Atlantic	55.1	53.7	59.2	55.0	53.6	62.4	51.0	46.1	53.0	42.5
East South Central	55.5	55.9	64.2	52.2	.	.	.	.	.	.
West South Central	56.1	60.4	57.8	54.9	62.5	59.5	51.5	41.7	.	.
Mountain	53.6	55.0	56.9	55.1	.	.	.	.	.	.
Pacific	50.2	49.4	52.4	52.3	49.4	51.6	54.3	41.1	48.1	.
Type of Practice										
Solo	53.9	53.9	57.5	53.1	61.8	57.5	.	45.2	54.2	.
Non-solo	52.2	53.5	55.0	52.9	50.2	56.5	51.7	41.9	53.9	43.6
Location										
Nonmetropolitan	58.1	59.0	63.1	56.0	61.3	60.4	.	.	.	.
Metropolitan—										
Less than 1,000,000	54.2	53.0	57.8	54.4	55.7	59.0	54.4	43.6	55.6	46.5
1,000,000 and over	50.6	50.8	53.9	51.1	51.1	54.9	48.2	44.2	52.4	40.9
Employment Status										
Self-employed	54.7	55.0	58.6	53.3	58.9	57.6	52.1	45.7	56.2	42.6
Employee	48.0	49.2	48.1	51.6	45.4	54.1	49.9	39.7	49.3	44.6
Physician Age										
Less than 36 years	55.3	57.1	58.2	54.4	55.0	57.6	46.6	.	55.7	.
36-45 years	54.4	55.7	58.3	55.0	51.9	60.8	55.1	42.0	53.7	44.1
46-55 years	53.6	53.3	56.0	54.3	56.0	55.6	50.0	49.1	55.3	45.4
56-65 years	50.5	55.6	51.0	50.2	51.1	52.6	52.2	42.3	51.8	43.7
66 or more years	45.3	43.6	46.5	45.8	.	.	.	39.3	.	.

Source: 1987 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

[a] All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

[b] Includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 5 (continued). **Standard Error of the Mean Number of Hours in Patient Care Activities per Week, 1987**[a]

		Specialty								
	All Physicians[b]	GP/FP	Int Med	Surg	Ped	Ob/Gyn	Rad	Psych	Anes	Path
All Physicians	0.28	0.71	0.72	0.58	1.05	1.01	0.96	0.87	1.12	0.95
Census Division										
New England	1.07	3.40	1.52	2.62	.	.	.	2.07	.	
Middle Atlantic	0.68	1.96	1.58	1.54	2.20	2.63	2.19	2.35	2.92	2.94
East North Central	0.67	1.87	1.76	1.28	2.24	3.04	1.82	2.92	2.39	1.41
West North Central	1.00	1.72	2.98	2.24	.	.	2.50	.	.	.
South Atlantic	0.72	1.64	1.96	1.49	2.61	2.65	1.72	2.16	2.94	2.56
East South Central	1.23	2.52	3.39	2.90	.	.	.	.	.	.
West South Central	1.02	2.20	2.77	1.91	5.92	2.26	2.89	1.80	.	.
Mountain	1.01	2.45	4.92	1.90	.	.	.	.	.	.
Pacific	0.63	1.69	1.61	1.20	2.15	1.74	2.97	1.97	3.28	.
Type of Practice										
Solo	0.46	0.97	1.10	0.89	2.37	1.64	.	1.19	2.07	.
Non-solo	0.35	1.02	0.96	0.73	1.05	1.23	1.01	1.18	1.33	0.98
Location										
Nonmetropolitan	0.91	1.52	3.37	1.67	3.22	2.45	.	.	.	.
Metropolitan—										
Less than 1,000,000	0.44	1.06	1.13	0.97	1.88	1.52	1.46	1.50	1.54	1.30
1,000,000 and over	0.39	1.14	0.97	0.75	1.29	1.50	1.37	1.10	1.71	1.48
Employment Status										
Self-employed	0.32	0.77	0.82	0.63	1.36	1.08	1.18	1.08	1.29	1.18
Employee	0.53	1.61	1.37	1.47	1.37	2.85	1.68	1.28	2.07	1.47
Physician Age										
Less than 36 years	0.84	1.69	2.18	1.86	2.34	2.90	2.07	.	2.93	.
36-45 years	0.49	1.32	1.12	1.06	1.57	1.84	2.01	1.67	1.60	1.50
46-55 years	0.56	1.76	1.65	0.97	2.56	2.06	1.37	1.70	2.55	1.97
56-65 years	0.58	1.38	1.64	1.24	2.26	1.54	2.16	1.42	3.17	1.72
66 or more years	0.83	1.56	1.80	2.10	.	.	.	2.10	.	.

Table 6. **Mean Number of Hours in Patient Care Activities per Week, 1978-80, 1982-87[a]**

	1978	1979	1980	1982	1983	1984	1985	1986	1987
All Physicians	45.6	44.8	44.3	51.3	51.8	51.5	51.3	52.2	52.9
Specialty									
General/Family Practice	45.2	44.5	43.7	53.9	54.6	53.3	53.6	53.3	53.7
Internal Medicine	47.8	47.1	47.0	52.8	53.4	53.0	52.4	54.0	56.0
Surgery	48.0	46.5	46.1	51.1	50.7	51.5	51.2	52.6	53.0
Pediatrics	44.0	43.3	43.8	50.3	52.3	51.1	50.6	52.4	53.6
Obstetrics/Gynecology	48.1	47.7	46.2	53.3	55.8	55.7	56.9	59.0	57.0
Radiology	43.9	43.8	41.8	54.1	53.8	50.5	51.5	51.6	51.4
Psychiatry	37.6	39.5	38.1	43.8	44.0	45.2	45.1	43.0	43.9
Anesthesiology	46.8	44.6	46.4	56.4	59.5	54.9	53.5	55.0	54.0
Census Division									
New England	45.0	43.4	42.8	50.6	49.3	49.3	49.4	51.4	51.7
Middle Atlantic	43.8	43.9	42.4	49.3	50.4	50.4	49.8	50.9	49.8
East North Central	45.5	43.8	44.0	51.7	53.0	51.5	50.8	52.4	52.7
West North Central	47.6	46.6	48.1	52.5	52.8	50.9	51.9	52.3	55.0
South Atlantic	45.7	46.3	44.8	52.8	51.2	52.3	51.6	52.6	55.1
East South Central	49.9	47.2	48.7	53.6	54.5	56.3	56.5	52.9	55.5
West South Central	46.9	45.9	45.8	53.4	55.3	54.4	54.5	54.4	56.1
Mountain	48.9	46.1	46.3	52.1	51.5	52.7	51.3	52.3	53.6
Pacific	44.3	43.5	43.0	48.8	50.5	49.0	49.9	51.5	50.2
Type of Practice									
Solo	44.3	44.7	43.5	51.1	52.1	51.9	52.1	52.5	53.9
Non-solo	47.4	44.9	45.0	51.4	51.6	51.1	50.6	51.9	52.2
Location									
Nonmetropolitan	48.2	47.9	47.6	56.5	55.8	56.4	54.5	55.8	58.1
Metropolitan--									
Less than 1,000,000	47.3	45.9	45.2	51.6	52.8	52.1	52.0	53.0	54.2
1,000,000 and over	43.7	43.2	43.0	49.9	50.1	49.9	50.0	50.7	50.6
Physician Age									
Less than 36 years	47.1	47.0	46.4	53.1	53.5	54.1	52.0	55.0	55.3
36-45 years	47.2	46.5	45.9	52.1	52.7	52.4	52.2	53.0	54.4
46-55 years	47.3	46.2	45.7	51.6	52.7	52.0	52.1	52.2	53.6
56-65 years	45.1	43.9	43.4	50.4	51.2	50.4	51.2	50.9	50.5
66 or more years	36.7	36.3	36.9	45.1	43.6	44.1	44.0	47.0	45.3

Source: 1982-87, AMA Socioeconomic Monitoring System core surveys. 1978-80, AMA Periodic Surveys of Physicians. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. Data, other than in the specialty breakdown, are based on responses from physicians in all specialties. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 6 (continued). **Standard Error of the Mean Number of Hours in Patient Care Activities per Week, 1978-80, 1982-87**[a]

	1978	1979	1980	1982	1983	1984	1985	1986	1987
All Physicians	0.22	0.22	0.21	0.28	0.28	0.28	0.26	0.28	0.28
Specialty									
General/Family Practice	0.47	0.50	0.46	0.69	0.70	0.70	0.66	0.72	0.71
Internal Medicine	0.59	0.53	0.49	0.77	0.77	0.75	0.74	0.72	0.72
Surgery	0.49	0.50	0.46	0.52	0.53	0.59	0.56	0.66	0.58
Pediatrics	0.78	0.76	0.78	0.91	1.06	1.03	0.94	1.00	1.05
Obstetrics/Gynecology	0.87	0.88	0.80	0.96	1.09	1.00	1.05	1.14	1.01
Radiology	0.63	0.71	0.83	0.99	1.05	0.88	0.82	0.83	0.96
Psychiatry	0.73	0.69	0.61	0.82	0.88	0.84	0.82	0.84	0.87
Anesthesiology	1.01	1.15	0.87	1.23	1.19	1.26	0.95	1.13	1.12
Census Division									
New England	0.86	0.81	0.85	1.07	1.08	1.12	1.08	1.06	1.07
Middle Atlantic	0.60	0.57	0.48	0.68	0.74	0.73	0.67	0.70	0.68
East North Central	0.52	0.54	0.51	0.70	0.71	0.69	0.65	0.72	0.67
West North Central	0.77	0.83	0.73	0.91	0.99	1.07	0.96	1.01	1.00
South Atlantic	0.55	0.59	0.51	0.70	0.64	0.66	0.61	0.74	0.72
East South Central	1.00	0.90	0.99	1.19	1.26	1.19	1.21	1.28	1.23
West South Central	0.77	0.78	0.71	0.90	0.91	0.81	0.88	0.84	1.02
Mountain	0.99	0.96	1.04	1.27	1.26	1.31	1.04	1.16	1.01
Pacific	0.49	0.49	0.47	0.68	0.66	0.68	0.61	0.66	0.63
Type of Practice									
Solo	0.31	0.33	0.30	0.40	0.43	0.42	0.42	0.45	0.46
Non-solo	0.31	0.30	0.29	0.39	0.37	0.37	0.33	0.36	0.35
Location									
Nonmetropolitan	0.67	0.67	0.72	0.86	0.82	0.84	0.78	0.92	0.91
Metropolitan—									
Less than 1,000,000	0.36	0.35	0.32	0.43	0.42	0.43	0.41	0.43	0.44
1,000,000 and over	0.31	0.32	0.29	0.40	0.42	0.41	0.38	0.41	0.39
Physician Age									
Less than 36 years	0.79	0.73	0.65	0.92	0.89	0.84	0.75	0.85	0.84
36-45 years	0.41	0.42	0.39	0.47	0.49	0.49	0.44	0.45	0.49
46-55 years	0.40	0.39	0.39	0.53	0.57	0.57	0.53	0.55	0.56
56-65 years	0.45	0.45	0.39	0.62	0.58	0.57	0.57	0.68	0.58
66 or more years	0.62	0.64	0.62	0.79	0.80	0.86	0.86	0.98	0.83

Table 7. **Mean Number of Hours in Direct Patient Care Activities per Week, 1987[a]**

		Specialty				
	All Physicians[b]	General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	49.3	49.1	50.2	49.6	47.2	53.0
Census Division						
New England	47.3	48.3	47.6	49.9	.	.
Middle Atlantic	45.5	43.6	47.1	46.5	45.3	47.5
East North Central	49.4	48.5	49.9	48.8	47.6	56.5
West North Central	51.9	50.9	54.0	51.9	.	.
South Atlantic	51.4	48.7	53.5	51.1	45.9	57.8
East South Central	52.2	52.0	58.7	49.1	.	.
West South Central	53.2	55.1	52.0	51.6	55.8	55.9
Mountain	50.3	50.8	50.3	50.7	.	.
Pacific	46.7	45.2	46.8	48.9	43.2	47.9
Type of Practice						
Solo	50.3	49.2	51.4	49.6	53.6	53.4
Non-solo	48.6	49.1	49.4	49.6	44.5	52.5
Location						
Nonmetropolitan	54.8	54.6	57.0	53.0	56.5	56.2
Metropolitan—						
Less than 1,000,000	50.7	48.5	52.4	51.1	49.0	55.2
1,000,000 and over	46.8	46.0	47.8	47.5	44.7	50.7
Employment Status						
Self-employed	50.9	50.2	52.5	49.9	51.8	53.4
Employee	44.7	45.5	43.2	48.2	40.0	51.1
Physician Age						
Less than 36 years	51.8	52.5	52.4	51.5	49.0	53.6
36-45 years	50.9	51.3	52.3	51.4	46.1	56.9
46-55 years	49.9	48.6	50.4	50.9	48.6	51.4
56-65 years	46.9	50.5	45.0	46.9	44.3	48.3
66 or more years	42.0	39.4	41.7	42.5	.	.

Source: 1987 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

[a] All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

[b] Excludes physicians in radiology, psychiatry, anesthesiology, and pathology, but otherwise includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 7 (continued). **Standard Error of the Mean Number of Hours in Direct Patient Care Activities per Week, 1987**[a]

		Specialty				
	All Physicians[b]	General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	0.31	0.65	0.67	0.55	0.96	0.98
Census Division						
New England	1.15	3.30	1.40	2.60	.	.
Middle Atlantic	0.74	1.80	1.42	1.49	2.04	2.55
East North Central	0.76	1.82	1.64	1.23	2.13	2.95
West North Central	1.09	1.59	2.84	2.25	.	.
South Atlantic	0.76	1.48	1.77	1.38	2.36	2.57
East South Central	1.40	2.55	3.19	2.75	.	.
West South Central	1.09	1.99	2.66	1.80	5.10	2.17
Mountain	1.14	2.24	4.76	1.83	.	.
Pacific	0.65	1.48	1.50	1.15	2.01	1.65
Type of Practice						
Solo	0.48	0.90	1.02	0.84	2.17	1.59
Non-solo	0.40	0.96	0.89	0.71	0.97	1.18
Location						
Nonmetropolitan	0.91	1.41	3.14	1.61	3.17	2.39
Metropolitan—						
Less than 1,000,000	0.49	0.97	1.06	0.91	1.67	1.48
1,000,000 and over	0.42	1.05	0.88	0.73	1.19	1.44
Employment Status						
Self-employed	0.34	0.71	0.76	0.60	1.23	1.04
Employee	0.64	1.53	1.28	1.43	1.30	2.85
Physician Age						
Less than 36 years	0.86	1.55	1.95	1.81	1.86	2.80
36-45 years	0.53	1.24	1.03	1.01	1.45	1.82
46-55 years	0.63	1.65	1.59	0.93	2.25	1.92
56-65 years	0.65	1.26	1.54	1.17	2.40	1.46
66 or more years	0.89	1.38	1.67	2.00	.	.

Table 8. **Mean Number of Hours in Direct Patient Care Activities per Week, 1982-87**[a]

	1982	1983	1984	1985	1986	1987
All Physicians	47.7	48.0	47.6	47.4	48.5	49.3
Specialty						
General/Family Practice	50.0	50.2	49.1	49.0	48.9	49.1
Internal Medicine	47.8	48.0	47.2	46.7	48.2	50.2
Surgery	47.6	47.4	48.1	48.0	49.2	49.6
Pediatrics	44.8	46.2	45.0	44.6	46.0	47.2
Obstetrics/Gynecology	49.2	51.4	50.8	52.6	54.4	53.0
Census Division						
New England	47.5	45.1	45.2	44.6	46.3	47.3
Middle Atlantic	44.9	46.2	46.3	45.6	46.2	45.5
East North Central	48.0	48.9	46.6	46.2	49.0	49.4
West North Central	50.4	49.6	47.8	47.4	48.0	51.9
South Atlantic	49.1	47.5	48.7	47.9	49.2	51.4
East South Central	49.7	51.6	52.9	52.9	50.3	52.2
West South Central	49.7	51.6	51.1	50.7	50.9	53.2
Mountain	49.4	47.8	48.7	48.2	48.6	50.3
Pacific	45.6	46.2	45.2	46.4	48.0	46.7
Type of Practice						
Solo	47.6	48.3	47.9	48.3	48.8	50.3
Non-solo	47.9	47.7	47.4	46.5	48.1	48.6
Location						
Nonmetropolitan	54.0	53.0	53.8	51.4	52.9	54.8
Metropolitan—						
Less than 1,000,000	48.3	48.9	48.4	48.2	49.3	50.7
1,000,000 and over	45.9	45.7	45.5	45.7	46.6	46.8
Physician Age						
Less than 36 years	49.2	50.1	50.3	47.7	51.2	51.8
36-45 years	48.3	48.7	48.6	48.4	49.2	50.9
46-55 years	48.4	48.8	48.5	48.1	48.4	49.9
56-65 years	47.2	47.5	46.3	47.2	47.4	46.9
66 or more years	41.8	39.8	39.8	40.5	43.4	42.0

Source: 1982-87, AMA Socioeconomic Monitoring System core surveys. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

[a] Data, other than in the specialty breakdown, include physicians in all specialties except radiology, psychiatry, anesthesiology, and pathology. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 8 (continued). **Standard Error of the Mean Number of Hours in Direct Patient Care Activities per Week, 1982-87**[a]

	1982	1983	1984	1985	1986	1987
All Physicians	0.31	0.30	0.31	0.29	0.31	0.31
Specialty						
General/Family Practice	0.66	0.65	0.66	0.60	0.67	0.65
Internal Medicine	0.73	0.72	0.71	0.69	0.68	0.67
Surgery	0.49	0.50	0.56	0.53	0.61	0.55
Pediatrics	0.82	0.99	0.96	0.85	0.88	0.96
Obstetrics/Gynecology	0.90	1.03	0.91	0.98	1.06	0.98
Census Division						
New England	1.24	1.07	1.36	1.23	1.19	1.15
Middle Atlantic	0.73	0.83	0.84	0.75	0.77	0.74
East North Central	0.75	0.76	0.77	0.73	0.80	0.76
West North Central	0.98	1.08	1.09	1.10	1.17	1.09
South Atlantic	0.80	0.67	0.75	0.65	0.82	0.76
East South Central	1.23	1.32	1.19	1.29	1.35	1.40
West South Central	0.91	0.90	0.86	0.92	0.88	1.09
Mountain	1.40	1.40	1.35	1.13	1.24	1.14
Pacific	0.77	0.69	0.73	0.67	0.71	0.65
Type of Practice						
Solo	0.43	0.44	0.45	0.44	0.46	0.48
Non-solo	0.43	0.41	0.43	0.38	0.42	0.40
Location						
Nonmetropolitan	0.88	0.81	0.82	0.81	0.93	0.91
Metropolitan—						
Less than 1,000,000	0.47	0.45	0.46	0.44	0.46	0.[illegible]
1,000,000 and over	0.44	0.45	0.47	0.42	0.46	0.42
Physician Age						
Less than 36 years	0.97	0.96	0.86	0.79	0.94	0.86
36-45 years	0.53	0.53	0.56	0.48	0.49	0.53
46-55 years	0.60	0.62	0.64	0.61	0.62	0.63
56-65 years	0.66	0.58	0.62	0.64	0.77	0.65
66 or more years	0.86	0.82	0.90	0.89	0.99	0.89

Table 9. **Mean Number of Office Hours per Week, 1987**[a]

	All Physicians[b]	Specialty				
		General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	26.8	34.2	27.0	23.2	30.8	28.1
Census Division						
New England	26.2	32.7	27.3	22.1	.	.
Middle Atlantic	23.8	27.8	24.9	22.5	30.2	25.2
East North Central	25.0	33.9	25.8	18.9	29.7	26.5
West North Central	27.8	33.6	29.1	23.6	.	.
South Atlantic	27.7	35.1	27.8	23.4	31.7	30.5
East South Central	28.2	35.3	25.0	25.5	.	.
West South Central	30.6	37.1	28.4	27.8	34.4	31.8
Mountain	27.4	37.1	31.5	22.2	.	.
Pacific	27.2	34.0	28.7	24.6	28.4	26.6
Type of Practice						
Solo	29.9	35.1	29.8	25.0	39.2	29.8
Non-solo	24.5	33.3	25.3	21.4	27.2	26.6
Location						
Nonmetropolitan	30.8	35.3	30.7	25.0	37.7	32.3
Metropolitan—						
Less than 1,000,000	27.1	35.0	27.4	23.5	31.1	28.2
1,000,000 and over	25.6	32.3	26.3	22.6	29.8	27.2
Employment Status						
Self-employed	28.8	35.0	29.1	23.8	38.4	28.9
Employee	20.7	31.5	20.5	19.5	19.0	24.4
Physician Age						
Less than 36 years	25.7	36.6	24.8	22.8	29.8	28.0
36-45 years	26.0	35.3	26.8	23.2	28.8	28.6
46-55 years	26.9	34.1	27.0	23.7	32.3	26.2
56-65 years	28.9	34.7	29.4	22.8	33.3	29.4
66 or more years	26.6	29.2	27.9	22.5	.	30.0

Source: 1987 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

b. Excludes physicians in radiology, psychiatry, anesthesiology, and pathology, but otherwise includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 9 (continued). **Standard Error of the Mean Number of Office Hours per Week, 1987**[a]

	All Physicians[b]	Specialty General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	0.27	0.51	0.51	0.44	0.98	0.55
Census Division						
New England	1.09	2.83	1.58	2.08		
Middle Atlantic	0.64	1.61	1.08	1.21	2.22	1.21
East North Central	0.67	1.23	1.33	0.95	2.55	1.38
West North Central	0.88	1.19	1.80	1.43		
South Atlantic	0.66	1.22	1.25	1.16	2.87	1.17
East South Central	1.12	1.67	2.42	1.75		
West South Central	0.85	1.46	1.92	1.39	3.08	2.23
Mountain	1.15	1.42	2.19	1.85		
Pacific	0.64	1.53	1.30	0.96	2.20	1.15
Type of Practice						
Solo	0.36	0.69	0.68	0.64	1.44	0.77
Non-solo	0.37	0.74	0.70	0.60	1.18	0.77
Location						
Nonmetropolitan	0.69	0.81	2.07	1.15	2.34	1.64
Metropolitan—						
Less than 1,000,000	0.41	0.82	0.80	0.69	1.43	0.81
1,000,000 and over	0.39	0.94	0.68	0.66	1.47	0.81
Employment Status						
Self-employed	0.28	0.53	0.52	0.47	0.91	0.55
Employee	0.63	1.32	1.19	1.33	1.59	1.89
Physician Age						
Less than 36 years	0.87	1.01	1.46	1.59	2.88	2.44
36-45 years	0.46	0.95	0.76	0.79	1.67	0.96
46-55 years	0.56	1.37	1.25	0.84	1.97	1.10
56-65 years	0.56	1.05	1.30	0.94	2.10	0.92
66 or more years	0.70	1.18	1.25	1.27		1.81

Table 10. **Mean Number of Office Hours per Week, 1978-80, 1982-87[a]**

	1978	1979	1980	1982	1983	1984	1985	1986	1987
All Physicians	30.8	28.2	27.9	26.5	26.3	24.9	25.3	26.2	26.8
Specialty									
General/Family Practice	35.9	33.4	33.7	33.3	33.2	32.4	32.9	33.9	34.2
Internal Medicine	30.6	28.2	27.7	26.9	25.6	24.2	24.8	25.8	27.0
Surgery	25.4	22.7	22.2	21.7	21.6	21.2	21.9	22.1	23.2
Pediatrics	36.7	34.8	34.8	31.9	32.3	29.4	29.1	31.4	30.8
Obstetrics/Gynecology	31.4	29.4	29.4	26.8	27.5	25.9	28.4	28.1	28.1
Census Division									
New England	29.2	26.2	26.5	25.8	25.1	24.2	23.7	25.0	26.2
Middle Atlantic	28.2	26.3	25.4	24.4	23.3	22.8	23.5	24.3	23.8
East North Central	29.0	26.5	26.8	25.0	25.1	22.7	23.9	24.5	25.0
West North Central	30.0	27.8	28.0	26.5	27.5	24.9	26.1	27.0	27.8
South Atlantic	32.5	29.6	28.6	26.9	26.8	26.2	26.3	26.4	27.7
East South Central	33.7	29.3	29.2	27.0	28.9	28.7	28.6	27.6	28.2
West South Central	32.9	30.0	31.1	29.4	28.8	26.3	26.6	28.4	30.6
Mountain	31.3	28.2	28.5	28.2	26.7	26.5	25.5	27.1	27.4
Pacific	32.7	29.8	28.8	27.7	27.1	25.3	26.0	27.9	27.2
Type of Practice									
Solo	30.8	28.7	28.5	27.5	28.0	27.0	28.0	28.6	29.9
Non-solo	30.8	27.7	27.2	25.5	24.9	23.0	23.0	24.4	24.5
Location									
Nonmetropolitan	33.6	31.0	30.8	29.7	30.2	29.8	28.9	30.2	30.8
Metropolitan—									
Less than 1,000,000	31.2	28.3	28.2	26.7	26.5	24.9	25.6	26.4	27.1
1,000,000 and over	29.8	27.5	26.9	25.6	25.2	23.8	24.3	25.2	25.6
Physician Age									
Less than 36 years	29.7	29.0	28.2	25.6	26.0	24.9	22.9	26.5	25.7
36-45 years	29.3	27.1	26.8	25.4	25.1	23.1	24.1	25.1	26.0
46-55 years	32.7	29.1	28.6	27.4	27.2	26.0	25.9	26.4	26.9
56-65 years	32.1	28.7	28.7	27.8	28.0	27.2	27.9	28.3	28.9
66 or more years	29.2	27.0	27.1	27.3	26.2	24.6	26.6	26.2	26.6

Source: 1982-87, AMA Socioeconomic Monitoring System core surveys. 1978-80, AMA Periodic Surveys of Physicians. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

[a] Data, other than in the specialty breakdown, include physicians in all specialties except radiology, psychiatry, anesthesiology, and pathology. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 10 (continued). **Standard Error of the Mean Number of Office Hours per Week, 1978-80, 1982-87[a]**

	1978	1979	1980	1982	1983	1984	1985	1986	1987
All Physicians	0.24	0.21	0.19	0.26	0.25	0.26	0.26	0.26	0.27
Specialty									
General/Family Practice	0.40	0.37	0.32	0.43	0.47	0.46	0.45	0.48	0.51
Internal Medicine	0.54	0.41	0.38	0.59	0.56	0.57	0.61	0.57	0.51
Surgery	0.47	0.38	0.35	0.38	0.41	0.41	0.44	0.42	0.44
Pediatrics	0.90	0.67	0.65	0.79	0.78	0.83	0.85	0.87	0.98
Obstetrics/Gynecology	0.69	0.53	0.49	0.52	0.57	0.60	0.59	0.64	0.55
Census Division									
New England	0.98	0.90	0.83	1.12	0.96	1.19	1.23	1.13	1.09
Middle Atlantic	0.63	0.50	0.48	0.66	0.68	0.67	0.63	0.64	0.64
East North Central	0.55	0.46	0.45	0.63	0.61	0.61	0.64	0.66	0.67
West North Central	0.84	0.77	0.64	0.90	0.89	0.93	0.95	1.00	0.88
South Atlantic	0.64	0.54	0.48	0.61	0.62	0.60	0.60	0.67	0.66
East South Central	1.21	0.85	0.96	1.02	1.07	1.09	1.21	1.08	1.12
West South Central	0.82	0.71	0.65	0.81	0.78	0.79	0.83	0.80	0.85
Mountain	1.09	0.87	0.88	1.27	1.16	1.23	1.22	1.11	1.15
Pacific	0.52	0.49	0.44	0.62	0.61	0.63	0.66	0.63	0.64
Type of Practice									
Solo	0.32	0.28	0.25	0.35	0.34	0.33	0.34	0.35	0.36
Non-solo	0.38	0.31	0.29	0.38	0.37	0.39	0.38	0.38	0.37
Location									
Nonmetropolitan	0.67	0.57	0.55	0.68	0.63	0.64	0.66	0.69	0.69
Metropolitan—									
Less than 1,000,000	0.40	0.32	0.30	0.40	0.40	0.40	0.42	0.41	0.41
1,000,000 and over	0.35	0.31	0.28	0.38	0.38	0.39	0.38	0.39	0.39
Physician Age									
Less than 36 years	1.01	0.69	0.66	0.81	0.82	0.81	0.80	0.86	0.87
36-45 years	0.47	0.42	0.38	0.48	0.48	0.47	0.45	0.43	0.46
46-55 years	0.45	0.39	0.38	0.52	0.53	0.54	0.53	0.53	0.56
56-65 years	0.48	0.41	0.38	0.53	0.47	0.51	0.60	0.62	0.56
66 or more years	0.61	0.54	0.49	0.61	0.65	0.66	0.65	0.75	0.70

Table 11. **Mean Number of Hours on Hospital Rounds per Week, 1987**[a]

		Specialty				
	All Physicians[b]	General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	8.8	6.3	14.7	7.7	9.1	5.5
Census Division						
New England	8.0	5.4	12.2	7.3	.	.
Middle Atlantic	9.4	6.7	14.6	8.1	8.9	4.3
East North Central	9.8	7.3	15.6	8.3	12.7	6.4
West North Central	9.3	6.7	17.4	7.6	.	.
South Atlantic	9.3	6.4	15.6	8.6	6.7	5.5
East South Central	10.2	7.9	19.6	6.6	.	.
West South Central	9.5	7.2	16.7	6.9	13.1	7.9
Mountain	6.8	4.4	11.7	8.0	.	.
Pacific	6.6	3.9	10.6	6.8	7.0	4.8
Type of Practice						
Solo	8.8	6.7	14.2	7.4	8.3	5.4
Non-solo	8.9	5.9	15.0	8.1	9.4	5.6
Location						
Nonmetropolitan	8.5	7.2	16.7	8.4	8.3	6.1
Metropolitan—						
Less than 1,000,000	9.3	5.8	15.6	8.3	10.2	6.2
1,000,000 and over	8.5	6.3	13.7	7.0	8.4	4.9
Employment Status						
Self-employed	9.3	6.9	15.3	7.7	8.2	5.6
Employee	7.4	4.3	12.7	8.2	10.5	5.3
Physician Age						
Less than 36 years	9.9	6.3	16.8	8.0	12.7	4.4
36-45 years	9.9	6.8	16.2	8.3	8.6	5.5
46-55 years	8.9	5.9	14.9	7.9	9.2	6.0
56-65 years	7.2	7.1	10.1	7.0	7.2	5.7
66 or more years	5.9	4.5	8.8	6.5	.	4.6

Source: 1987 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

b. Excludes physicians in radiology, psychiatry, anesthesiology, and pathology, but otherwise includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 11 (continued). **Standard Error of the Mean Number of Hours on Hospital Rounds per Week, 1987[a]**

		Specialty				
	All Physicians[b]	General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	0.18	0.25	0.47	0.25	0.60	0.22
Census Division						
New England	0.67	1.18	1.38	0.88	.	.
Middle Atlantic	0.48	0.86	1.00	0.82	1.37	0.41
East North Central	0.45	0.66	1.15	0.64	1.65	0.46
West North Central	0.66	0.57	1.87	1.02	.	.
South Atlantic	0.45	0.59	1.22	0.59	1.68	0.53
East South Central	0.80	1.04	2.46	0.67	.	.
West South Central	0.59	0.69	2.13	0.72	2.45	0.90
Mountain	0.53	0.60	2.19	0.91	.	.
Pacific	0.35	0.55	0.92	0.54	1.23	0.44
Type of Practice						
Solo	0.25	0.36	0.67	0.35	0.93	0.32
Non-solo	0.25	0.33	0.65	0.35	0.76	0.31
Location						
Nonmetropolitan	0.45	0.48	1.91	0.91	0.94	0.63
Metropolitan—						
Less than 1,000,000	0.28	0.38	0.78	0.38	1.02	0.37
1,000,000 and over	0.26	0.43	0.62	0.35	0.83	0.30
Employment Status						
Self-employed	0.19	0.28	0.53	0.26	0.59	0.22
Employee	0.40	0.50	1.04	0.81	1.24	0.84
Physician Age						
Less than 36 years	0.68	0.62	1.57	1.19	2.54	0.75
36-45 years	0.33	0.45	0.72	0.50	0.96	0.34
46-55 years	0.35	0.60	1.12	0.41	1.16	0.52
56-65 years	0.28	0.51	0.95	0.45	0.85	0.41
66 or more years	0.39	0.63	0.90	0.79	.	0.81

Table 12. **Mean Number of Hours on Hospital Rounds per Week, 1982-87**[a]

	1982	1983	1984	1985	1986	1987
All Physicians	9.5	10.0	8.5	8.3	8.8	8.8
Specialty						
General/Family Practice	8.4	8.5	6.7	6.7	6.4	6.3
Internal Medicine	14.7	16.1	13.3	13.4	14.4	14.7
Surgery	9.7	9.1	8.1	7.2	7.8	7.7
Pediatrics	8.2	9.5	7.6	7.9	8.7	9.1
Obstetrics/Gynecology	6.6	6.5	6.4	5.5	6.4	5.5
Census Division						
New England	9.1	9.7	7.1	7.5	7.7	8.0
Middle Atlantic	9.4	10.5	9.0	9.6	9.7	9.4
East North Central	10.4	12.1	9.0	9.3	10.4	9.8
West North Central	10.7	10.8	9.1	7.8	8.3	9.3
South Atlantic	10.0	9.6	8.7	7.9	9.1	9.3
East South Central	10.7	10.9	9.3	8.9	9.0	10.2
West South Central	9.6	10.6	9.4	9.3	8.7	9.5
Mountain	8.8	8.1	7.4	7.0	7.4	6.8
Pacific	7.5	8.0	7.1	6.7	7.0	6.6
Type of Practice						
Solo	9.5	9.8	8.1	8.3	8.8	8.8
Non-solo	9.5	10.2	8.9	8.3	8.9	8.9
Location						
Nonmetropolitan	10.9	10.9	8.6	7.6	7.9	8.5
Metropolitan—						
Less than 1,000,000	10.1	10.1	8.7	8.4	9.2	9.3
1,000,000 and over	8.6	9.8	8.3	8.4	8.7	8.5
Physician Age						
Less than 36 years	10.8	12.0	9.2	8.2	9.4	9.9
36-45 years	10.0	10.9	9.7	9.3	9.8	9.9
46-55 years	9.4	9.9	8.6	8.8	8.9	8.9
56-65 years	8.8	8.9	7.1	7.1	7.5	7.2
66 or more years	6.9	6.2	5.2	5.9	6.4	5.9

Source: 1982-87, AMA Socioeconomic Monitoring System core surveys. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. Data, other than in the specialty breakdown, are based on responses from physicians in all specialties except radiology, psychiatry, anesthesiology, and pathology. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 12 (continued). **Standard Error of the Mean Number of Hours on Hospital Rounds per Week, 1982-87[a]**

	1982	1983	1984	1985	1986	1987
All Physicians	0.17	0.18	0.16	0.17	0.18	0.18
Specialty						
General/Family Practice	0.28	0.27	0.25	0.26	0.26	0.25
Internal Medicine	0.51	0.53	0.49	0.52	0.50	0.47
Surgery	0.27	0.26	0.25	0.24	0.27	0.25
Pediatrics	0.41	0.67	0.41	0.51	0.55	0.60
Obstetrics/Gynecology	0.28	0.27	0.25	0.23	0.32	0.22
Census Division						
New England	0.72	0.69	0.58	0.64	0.74	0.67
Middle Atlantic	0.45	0.48	0.45	0.48	0.48	0.48
East North Central	0.42	0.55	0.41	0.44	0.53	0.45
West North Central	0.63	0.57	0.57	0.58	0.66	0.66
South Atlantic	0.45	0.42	0.41	0.35	0.45	0.45
East South Central	0.64	0.70	0.57	0.64	0.63	0.80
West South Central	0.55	0.54	0.50	0.57	0.50	0.59
Mountain	0.77	0.66	0.55	0.60	0.59	0.53
Pacific	0.38	0.42	0.39	0.37	0.36	0.35
Type of Practice						
Solo	0.24	0.25	0.21	0.24	0.26	0.25
Non-solo	0.25	0.27	0.24	0.23	0.25	0.25
Location						
Nonmetropolitan	0.47	0.44	0.39	0.38	0.40	0.45
Metropolitan—						
Less than 1,000,000	0.28	0.28	0.25	0.25	0.28	0.28
1,000,000 and over	0.24	0.28	0.25	0.26	0.27	0.26
Physician Age						
Less than 36 years	0.56	0.72	0.49	0.45	0.62	0.68
36-45 years	0.34	0.34	0.33	0.31	0.32	0.33
46-55 years	0.32	0.36	0.33	0.37	0.36	0.35
56-65 years	0.33	0.30	0.25	0.30	0.33	0.28
66 or more years	0.39	0.35	0.32	0.39	0.40	0.39

Table 13. Mean Number of Hours in Surgery per Week , 1987[a]

		Specialty				
	All Physicians[b]	General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	6.2	1.8	2.0	14.6	1.5	15.8
Census Division						
New England	5.5	1.9	0.8	15.9	.	.
Middle Atlantic	5.2	1.1	1.2	12.6	1.4	15.5
East North Central	7.4	2.1	2.3	17.8	1.0	19.0
West North Central	6.8	3.2	2.0	16.2	.	.
South Atlantic	6.2	0.8	3.0	14.3	1.3	16.0
East South Central	5.5	0.4	3.2	13.0	.	.
West South Central	6.0	2.1	2.0	12.9	1.2	13.1
Mountain	7.6	3.3	1.3	17.2	.	.
Pacific	6.1	2.1	1.7	13.5	2.1	13.2
Type of Practice						
Solo	6.4	1.9	1.6	13.0	2.0	14.3
Non-solo	6.1	1.7	2.2	16.3	1.3	17.0
Location						
Nonmetropolitan	5.6	2.4	0.6	14.0	3.2	13.9
Metropolitan—						
Less than 1,000,000	6.4	1.6	2.0	15.1	2.1	16.8
1,000,000 and over	6.1	1.7	2.0	14.3	0.9	15.2
Employment Status						
Self-employed	6.9	2.0	2.0	14.4	1.8	15.4
Employee	4.1	1.1	1.8	15.8	1.2	17.2
Physician Age						
Less than 36 years	5.5	2.6	2.6	15.4	1.6	18.6
36-45 years	6.3	1.9	2.5	15.7	1.5	17.7
46-55 years	7.9	1.8	2.1	15.6	1.6	16.2
56-65 years	5.3	1.7	0.4	13.2	1.0	11.2
66 or more years	3.8	1.0	0.3	9.4	.	11.0

Source: 1987 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

b. Excludes physicians in radiology, psychiatry, anesthesiology, and pathology, but otherwise includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 13 (continued). **Standard Error of the Mean Number of Hours in Surgery per Week, 1987**[a]

		Specialty				
	All Physicians[b]	General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	0.18	0.14	0.24	0.35	0.19	0.65
Census Division						
New England	0.73	0.73	0.37	1.47	.	.
Middle Atlantic	0.42	0.45	0.39	0.93	0.43	1.53
East North Central	0.52	0.42	0.72	0.98	0.47	2.06
West North Central	0.70	0.47	0.95	1.60	.	.
South Atlantic	0.42	0.29	0.74	0.72	0.43	1.68
East South Central	0.68	0.18	1.34	1.29	.	.
West South Central	0.46	0.32	0.77	0.95	0.41	1.23
Mountain	0.84	0.72	1.02	1.61	.	.
Pacific	0.43	0.30	0.61	0.79	0.61	1.32
Type of Practice						
Solo	0.25	0.20	0.31	0.44	0.38	0.97
Non-solo	0.25	0.20	0.35	0.54	0.22	0.86
Location						
Nonmetropolitan	0.44	0.29	0.61	1.00	0.96	1.13
Metropolitan—						
Less than 1,000,000	0.28	0.20	0.36	0.51	0.38	1.08
1,000,000 and over	0.27	0.26	0.36	0.55	0.16	0.92
Employment Status						
Self-employed	0.21	0.16	0.28	0.37	0.26	0.68
Employee	0.34	0.25	0.51	1.14	0.26	1.99
Physician Age						
Less than 36 years	0.53	0.41	0.86	1.32	0.53	2.62
36-45 years	0.31	0.24	0.43	0.68	0.33	1.11
46-55 years	0.40	0.43	0.53	0.58	0.41	1.30
56-65 years	0.34	0.27	0.20	0.73	0.24	0.97
66 or more years	0.41	0.22	0.15	1.01	.	2.47

Table 14. **Mean Number of Hours in Surgery per Week, 1982-87**[a]

	1982	1983	1984	1985	1986	1987
All Physicians	5.5	6.0	5.5	5.6	6.2	6.2
Specialty						
General/Family Practice	2.2	2.5	2.0	1.7	1.9	1.8
Internal Medicine	0.7	1.1	1.3	1.4	1.6	2.0
Surgery	13.0	13.8	13.1	13.4	14.6	14.6
Pediatrics	0.8	1.0	1.2	0.9	1.2	1.5
Obstetrics/Gynecology	13.6	15.8	13.6	14.6	17.1	15.8
Census Division						
New England	5.2	5.0	4.6	4.7	5.2	5.5
Middle Atlantic	4.9	6.3	5.1	5.4	5.6	5.2
East North Central	5.9	6.2	6.1	5.3	6.9	7.4
West North Central	6.8	6.1	7.0	5.9	6.1	6.8
South Atlantic	5.6	5.7	5.4	6.0	5.9	6.2
East South Central	6.0	6.2	5.6	6.7	6.3	5.5
West South Central	5.7	6.9	6.1	5.9	6.3	6.0
Mountain	5.8	5.8	5.4	6.8	6.8	7.6
Pacific	4.8	5.9	5.0	5.2	6.5	6.1
Type of Practice						
Solo	5.1	6.1	5.6	5.6	6.0	6.4
Non-solo	6.0	6.0	5.5	5.7	6.4	6.1
Location						
Nonmetropolitan	5.6	5.8	5.5	5.5	5.6	5.6
Metropolitan—						
Less than 1,000,000	5.5	6.5	6.2	6.1	6.7	6.4
1,000,000 and over	5.5	5.7	5.0	5.3	5.9	6.1
Physician Age						
Less than 36 years	3.8	4.3	4.0	3.9	5.6	5.5
36-45 years	6.3	6.6	6.0	6.2	6.3	6.3
46-55 years	6.4	7.0	6.5	6.8	7.5	7.9
56-65 years	5.5	6.1	5.5	5.3	5.7	5.3
66 or more years	3.3	3.2	3.5	3.0	4.1	3.8

Source: 1982-87, AMA Socioeconomic Monitoring System core surveys. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. Data, other than in the specialty breakdown, include physicians in all specialties except radiology, psychiatry, anesthesiology, and pathology. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 14 (continued). **Standard Error of the Mean Number of Hours in Surgery per Week , 1982-87[a]**

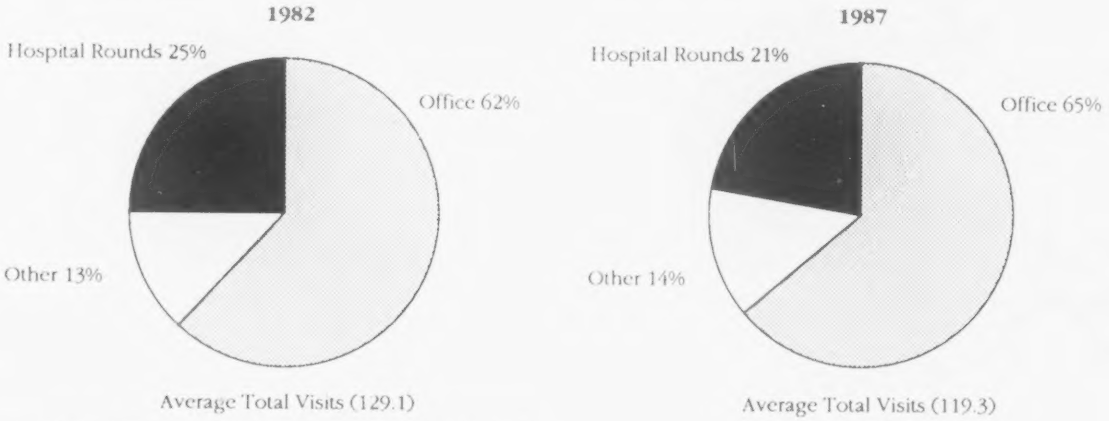
	1982	1983	1984[b]	1985	1986	1987
All Physicians	0.16	0.17	0.16	0.16	0.18	0.18
Specialty						
General/Family Practice	0.16	0.16	0.17	0.13	0.15	0.14
Internal Medicine	0.12	0.19	0.23	0.24	0.25	0.24
Surgery	0.32	0.33	0.31	0.33	0.38	0.35
Pediatrics	0.13	0.12	0.17	0.11	0.15	0.19
Obstetrics/Gynecology	0.60	0.64	0.48	0.55	0.69	0.65
Census Division						
New England	0.68	0.69	0.61	0.68	0.75	0.73
Middle Atlantic	0.41	0.52	0.42	0.40	0.47	0.42
East North Central	0.42	0.40	0.40	0.37	0.52	0.52
West North Central	0.64	0.54	0.66	0.62	0.67	0.70
South Atlantic	0.41	0.41	0.35	0.38	0.42	0.42
East South Central	0.73	0.63	0.60	0.82	0.72	0.68
West South Central	0.49	0.51	0.51	0.52	0.47	0.46
Mountain	0.69	0.74	0.62	0.79	0.79	0.84
Pacific	0.36	0.39	0.36	0.35	0.45	0.43
Type of Practice						
Solo	0.21	0.24	0.22	0.23	0.25	0.25
Non-solo	0.26	0.24	0.22	0.23	0.26	0.25
Location						
Nonmetropolitan	0.40	0.40	0.39	0.46	0.46	0.44
Metropolitan—						
Less than 1,000,000	0.25	0.26	0.25	0.26	0.28	0.28
1,000,000 and over	0.25	0.26	0.23	0.22	0.28	0.27
Physician Age						
Less than 36 years	0.37	0.41	0.37	0.38	0.58	0.53
36-45 years	0.32	0.32	0.30	0.29	0.29	0.31
46-55 years	0.35	0.38	0.35	0.37	0.40	0.40
56-65 years	0.36	0.35	0.32	0.34	0.42	0.34
66 or more years	0.31	0.33	0.34	0.32	0.46	0.41

Utilization of Physician Services

Utilization of physician services refers to the quantity of services provided by physicians to their patients. The number of patient visits is a measure that captures a large proportion of the overall utilization of physician services. In the statistics that follow, total visits are decomposed into office visits, visits on hospital rounds and other visits. Other visits include those in hospital emergency rooms and outpatient clinics, nursing homes, extended care facilities, and all other settings.

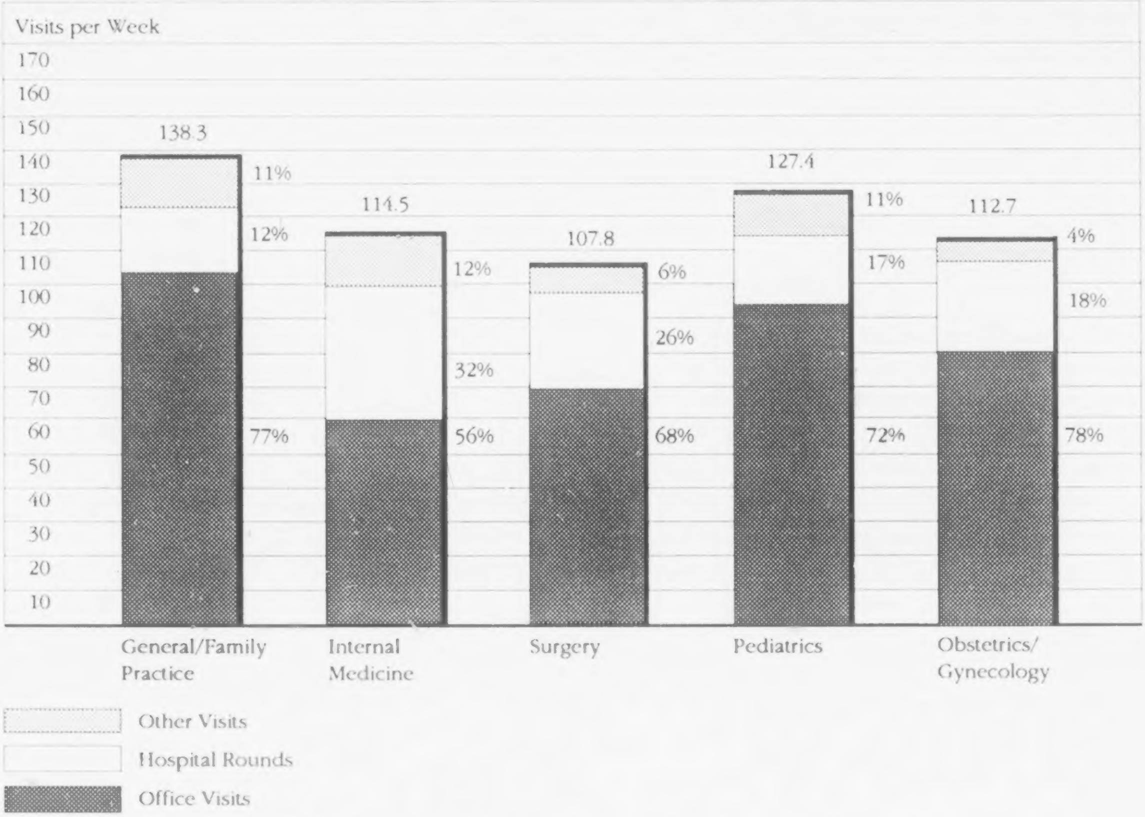
As shown in Figure 4, the average number of physician visits per physician per week was 119.3 in 1987. This represents a 7.6% decrease from 129.1 visits per week in 1982. The distribution of visits showed a slight shift toward more visits in the office and other settings and away from inpatient visits. Figure 5 indicates how the average number and distribution of visits differ across specialties. Similarly, Figure 6 indicates wide differences in the number of weekly visits per physician across geographic areas, ranging from 104.2 to 151.1, respectively, in the Pacific and East South Central Census Divisions.

Figure 4. **Distribution of Average Total Patient Visits per Week of All Physicians, 1982 and 1987[a]**



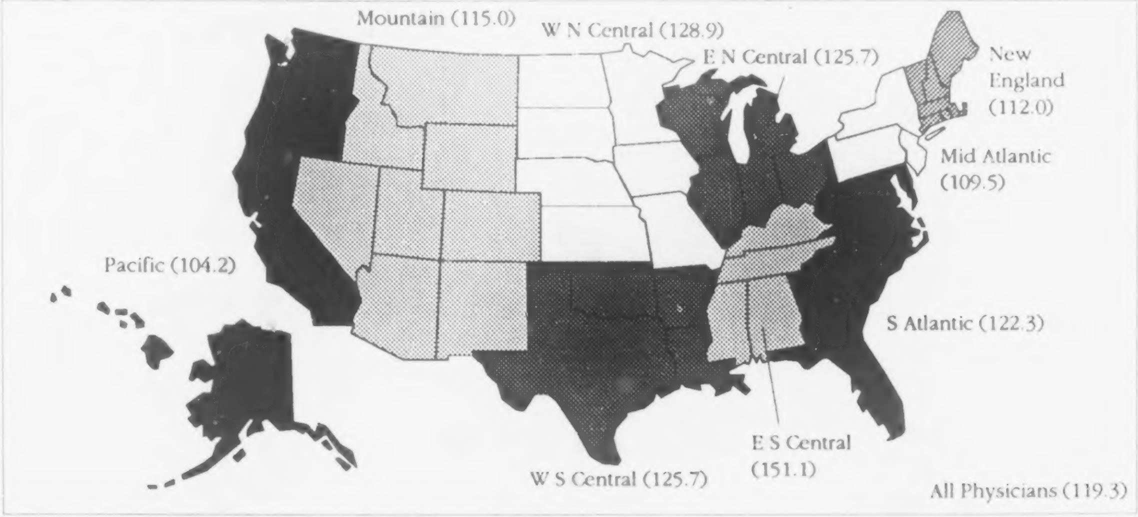
Source: AMA Socioeconomic Monitoring System 1982 and 1987 core surveys.
a. Excludes physicians in psychiatry, radiology, anesthesiology, and pathology.

Figure 5. **Distribution of Average Total Patient Visits per Week by Specialty, 1987**[a]



Source: AMA Socioeconomic Monitoring System 1987 core survey.
a. Excludes physicians in psychiatry, radiology, anesthesiology, and pathology.

Figure 6. **Average Total Patient Visits per Physician per Week by Census Division, 1987**[a]


Mountain (115.0)
W N Central (128.9)
E N Central (125.7)
New England (112.0)
Mid Atlantic (109.5)
Pacific (104.2)
S Atlantic (122.3)
E S Central (151.1)
W S Central (125.7)
All Physicians (119.3)

Source: AMA Socioeconomic Monitoring System 1987 core survey.
a. Excludes physicians in psychiatry, radiology, anesthesiology, and pathology.

Table 15. **Mean Number of Total Patient Visits per Week, 1987**[a]

		Specialty				
	All Physicians[b]	General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	119.3	138.3	114.5	107.8	127.4	112.7
Census Division						
New England	112.0	106.7	112.1	103.7	.	.
Middle Atlantic	109.5	124.3	106.8	107.9	116.0	102.0
East North Central	125.7	140.6	125.7	111.4	146.6	110.4
West North Central	128.9	153.4	117.6	107.1	.	.
South Atlantic	122.3	135.7	121.2	115.1	111.2	112.2
East South Central	151.1	176.6	140.6	135.0	.	.
West South Central	125.7	156.2	113.0	106.8	143.9	117.8
Mountain	115.0	131.4	99.7	93.3	.	.
Pacific	104.2	114.4	101.4	93.5	114.6	100.4
Type of Practice						
Solo	114.0	137.4	110.5	99.0	134.6	101.9
Non-solo	123.2	139.3	117.2	116.8	124.5	122.2
Location						
Nonmetropolitan	141.5	163.4	136.7	108.6	157.8	134.7
Metropolitan—						
Less than 1,000,000	127.6	137.4	127.5	116.7	132.6	118.8
1,000,000 and over	106.6	122.1	102.6	98.6	119.4	104.8
Employment Status						
Self-employed	123.2	143.1	120.8	107.9	141.2	112.9
Employee	107.8	121.7	95.4	106.6	106.8	111.9
Physician Age						
Less than 36 years	118.4	138.3	110.0	100.0	118.6	114.9
36-45 years	124.3	146.8	117.0	115.7	130.2	121.9
46-55 years	122.0	138.0	121.2	113.3	131.6	112.0
56-65 years	115.7	152.5	107.9	94.9	123.3	99.9
66 or more years	96.2	96.2	98.9	89.2	.	.

Source: 1987 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

b. Excludes physicians in radiology, psychiatry, anesthesiology, and pathology, but otherwise includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 15 (continued). **Standard Error of the Mean Number of Total Patient Visits per Week, 1987[a]**

		Specialty				
	All Physicians[b]	General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	1.22	2.93	2.50	2.03	3.67	3.11
Census Division						
New England	4.28	12.20	5.53	9.37	.	.
Middle Atlantic	2.67	7.19	4.86	5.88	7.40	5.24
East North Central	3.30	7.04	6.79	4.97	11.18	6.12
West North Central	4.03	[illegible]	8.85	6.11	.	.
South Atlantic	3.21	6.74	8.27	5.43	9.42	6.54
East South Central	5.91	12.88	10.96	8.81	.	.
West South Central	4.14	9.67	8.14	6.48	12.26	12.30
Mountain	4.60	9.22	8.83	5.28	.	.
Pacific	2.38	6.82	4.82	3.84	8.42	6.09
Type of Practice						
Solo	1.75	4.34	3.40	2.74	6.73	3.81
Non-solo	1.67	3.92	3.49	2.93	4.37	4.73
Location						
Nonmetropolitan	3.78	5.67	7.46	6.31	8.75	15.85
Metropolitan—						
Less than 1,000,000	2.02	4.60	4.71	3.18	5.68	4.91
1,000,000 and over	1.54	4.69	2.76	2.78	5.24	3.82
Employment Status						
Self-employed	1.39	3.46	2.99	2.14	4.27	3.33
Employee	2.50	5.02	4.04	6.18	6.18	8.82
Physician Age						
Less than 36 years	3.07	5.90	5.22	6.33	7.47	11.69
36-45 years	2.04	5.36	3.34	4.18	6.71	5.49
46-55 years	2.77	7.82	8.20	3.36	7.03	6.36
56-65 years	2.57	5.92	5.29	3.72	8.60	5.00
66 or more years	3.61	6.56	8.41	6.50	.	.

Table 16. **Mean Number of Total Patient Visits per Week, 1978-79, 1982-87**[a]

	1978	1979	1982	1983	1984	1985	1986	1987
All Physicians	133.1	127.4	129.1	123.4	118.1	117.1	117.7	119.3
Specialty								
General/Family Practice	175.1	156.1	161.3	148.4	139.0	138.1	139.2	138.3
Internal Medicine	117.6	115.3	117.0	113.4	107.7	105.2	111.1	114.5
Surgery	109.8	113.9	113.1	111.9	110.0	108.2	105.8	107.8
Pediatrics	142.0	137.7	134.4	137.4	128.7	130.8	131.9	127.4
Obstetrics/Gynecology	127.9	125.6	126.6	118.2	115.7	112.0	114.8	112.7
Census Division								
New England	106.2	105.0	129.1	113.3	108.7	98.2	109.5	112.0
Middle Atlantic	122.4	121.1	120.2	121.5	114.4	110.9	110.3	109.5
East North Central	138.8	139.7	135.1	127.5	123.1	122.6	121.3	125.7
West North Central	151.8	141.0	137.7	141.3	128.6	117.6	122.0	128.9
South Atlantic	129.7	129.8	131.2	123.4	119.9	122.3	118.9	122.3
East South Central	187.5	166.8	150.4	149.8	153.8	157.5	148.9	151.1
West South Central	140.4	136.7	139.9	138.6	132.6	127.5	126.3	125.7
Mountain	130.5	128.1	128.3	121.1	114.2	109.9	111.2	115.0
Pacific	123.2	109.8	112.3	100.9	94.7	102.4	107.4	104.2
Type of Practice								
Solo	129.3	121.7	123.8	116.7	113.7	112.3	112.2	114.0
Non-solo	138.2	133.8	134.8	129.1	122.3	121.2	122.0	123.2
Location								
Nonmetropolitan	172.1	157.4	166.9	153.3	150.3	144.0	140.0	141.5
Metropolitan—								
Less than 1,000,000	138.1	135.4	134.8	131.6	125.6	123.7	124.1	127.6
1,000,000 and over	116.8	113.4	115.3	107.8	104.1	105.6	106.7	106.6
Physician Age								
Less than 36 years	119.2	117.9	118.4	115.5	118.3	115.6	121.6	118.4
36-45 years	128.5	129.5	130.3	125.1	116.0	118.4	119.4	124.3
46-55 years	148.5	140.7	137.3	131.6	128.4	119.9	120.8	122.0
56-65 years	137.7	131.2	133.1	127.3	121.1	121.9	113.6	115.7
66 or more years	110.9	95.1	112.8	95.0	91.7	94.9	104.1	96.2

Source: 1982-87, AMA Socioeconomic Monitoring System core surveys. 1978-79, AMA Periodic Surveys of Physicians. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

[a] Data, other than in the specialty breakdown, are based on responses from physicians in all specialties except radiology, psychiatry, anesthesiology, and pathology. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 16 (continued). **Standard Error of the Mean Number of Total Patient Visits per Week, 1978-79, 1982-87**[a]

	1978	1979	1982	1983	1984	1985	1986	1987
All Physicians	2.0	1.3	1.4	1.5	1.3	1.3	1.3	1.2
Specialty								
General/Family Practice	4.1	3.0	3.3	3.2	3.1	2.8	3.0	2.9
Internal Medicine	3.7	2.5	3.1	2.8	2.8	3.0	3.1	2.5
Surgery	3.2	2.3	2.1	2.3	2.2	2.2	2.3	2.0
Pediatrics	6.5	3.8	4.0	4.7	4.0	3.7	4.1	3.7
Obstetrics/Gynecology	5.3	3.3	3.7	3.8	3.1	3.0	3.2	3.1
Census Division								
New England	5.4	3.7	5.9	4.3	5.2	4.3	4.8	4.3
Middle Atlantic	4.7	3.1	3.5	4.5	3.4	3.5	2.8	2.7
East North Central	4.7	3.2	3.3	3.3	3.3	3.3	3.2	3.3
West North Central	7.1	5.9	5.0	6.0	5.0	3.9	4.1	4.0
South Atlantic	5.4	3.3	3.6	3.1	2.8	2.9	3.8	3.2
East South Central	11.6	7.1	7.0	7.5	6.7	7.1	7.9	5.9
West South Central	6.7	4.8	5.1	4.6	4.0	4.1	3.9	4.1
Mountain	8.3	5.7	5.6	9.1	5.4	4.6	4.6	4.6
Pacific	3.6	2.5	3.3	2.4	2.4	2.4	2.8	2.4
Type of Practice								
Solo	2.7	1.8	1.9	2.0	1.8	1.8	1.8	1.8
Non-solo	2.9	1.9	2.1	2.1	1.8	1.8	1.9	1.7
Location								
Nonmetropolitan	6.4	4.5	4.9	4.3	4.1	4.3	3.9	3.8
Metropolitan—								
Less than 1,000,000	3.0	2.0	2.2	2.4	2.0	2.0	2.2	2.0
1,000,000 and over	2.5	1.8	1.9	1.8	1.7	1.7	1.7	1.5
Physician Age								
Less than 36 years	6.6	3.6	3.6	3.4	3.4	3.1	3.6	3.1
36-45 years	3.5	2.4	2.5	2.8	2.3	2.2	2.0	2.0
46-55 years	3.7	2.5	3.2	3.3	2.8	2.8	3.1	2.8
56-65 years	4.1	3.0	3.3	2.9	2.8	3.0	3.1	2.6
66 or more years	6.1	3.2	4.0	3.2	3.4	3.3	4.2	3.6

Table 17. **Mean Number of Office Visits per Week, 1987**[a]

	All Physicians[b]	Specialty				
		General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	77.0	106.4	64.1	73.0	91.8	88.2
Census Division						
New England	72.4	79.2	67.2	73.6	.	.
Middle Atlantic	67.5	91.1	58.0	68.8	87.7	81.8
East North Central	78.1	110.0	65.4	71.1	101.7	94.7
West North Central	82.5	112.8	66.1	77.7	.	.
South Atlantic	78.7	106.4	66.0	77.6	85.3	88.3
East South Central	95.1	131.8	69.8	90.3	.	.
West South Central	84.3	113.5	56.0	80.6	100.4	84.8
Mountain	77.0	109.9	65.3	60.9	.	.
Pacific	72.2	95.4	68.1	64.8	80.5	76.1
Type of Practice						
Solo	82.7	107.6	68.1	72.2	111.6	83.5
Non-solo	72.9	105.3	61.6	73.9	83.8	92.8
Location						
Nonmetropolitan	97.2	119.4	73.8	75.8	127.9	109.4
Metropolitan—						
Less than 1,000,000	80.6	106.5	70.0	79.0	95.5	88.5
1,000,000 and over	69.1	97.0	58.7	66.5	84.2	84.7
Employment Status						
Self-employed	83.9	110.7	69.6	75.1	116.9	89.0
Employee	56.4	91.7	47.3	59.1	53.6	84.8
Physician Age						
Less than 36 years	70.0	111.7	56.5	65.6	85.0	87.9
36-45 years	75.0	111.0	63.1	76.9	87.8	91.6
46-55 years	81.1	103.6	67.5	76.8	98.0	90.0
56-65 years	83.6	117.4	70.1	66.8	98.4	82.4
66 or more years	69.5	76.2	61.6	63.3	.	77.7

Source: 1987 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

[a] All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

[b] Excludes physicians in radiology, psychiatry, anesthesiology, and pathology, but otherwise includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 17 (continued). **Standard Error of the Mean Number of Office Visits per Week, 1987**[a]

	All Physicians[b]	Specialty				
		General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	1.02	2.38	1.69	1.75	3.53	2.53
Census Division						
New England	3.92	9.87	4.96	9.03	.	.
Middle Atlantic	2.29	6.90	3.27	4.09	8.19	3.99
East North Central	2.62	5.67	3.90	4.61	10.68	6.69
West North Central	3.41	5.05	5.43	6.30	.	.
South Atlantic	2.57	5.36	5.29	4.54	9.36	5.48
East South Central	5.32	10.09	9.02	8.41	.	.
West South Central	3.41	7.18	4.88	5.66	9.43	10.40
Mountain	4.37	8.91	7.41	6.01	.	.
Pacific	2.30	6.98	4.36	3.30	7.57	5.15
Type of Practice						
Solo	1.47	3.50	2.27	2.48	5.94	3.22
Non-solo	1.41	3.23	2.37	2.48	4.24	3.83
Location						
Nonmetropolitan	3.10	4.38	6.37	4.81	9.24	12.53
Metropolitan—						
Less than 1,000,000	1.62	3.67	3.07	2.81	5.32	3.49
1,000,000 and over	1.41	4.27	1.98	2.43	5.10	3.50
Employment Status						
Self-employed	1.14	2.68	1.89	1.89	3.78	2.60
Employee	2.11	4.98	3.40	4.51	5.32	8.53
Physician Age						
Less than 36 years	2.97	5.01	4.17	6.11	8.82	9.64
36-45 years	1.74	4.24	2.41	3.52	6.22	4.32
46-55 years	2.21	6.53	5.00	2.92	7.03	5.46
56-65 years	2.20	4.82	3.99	3.54	7.75	4.18
66 or more years	2.90	5.63	4.29	5.37	.	9.23

Table 18. **Mean Number of Office Visits per Week, 1978-80, 1982-87**[a]

	1978	1979	1980	1982	1983	1984	1985	1986	1987
All Physicians	95.4	89.4	86.6	80.2	77.4	73.0	73.5	75.7	77.0
Specialty									
General/Family Practice	129.9	119.0	113.8	116.2	106.3	99.5	101.8	106.3	106.4
Internal Medicine	72.2	68.1	65.2	63.4	60.9	57.5	57.2	60.0	64.1
Surgery	75.1	74.0	69.0	66.0	68.2	68.1	68.0	69.8	73.0
Pediatrics	118.0	115.2	123.2	99.7	105.1	96.0	96.9	100.7	91.8
Obstetrics/Gynecology	102.8	100.6	97.4	92.5	85.3	84.3	84.5	85.2	88.2
Census Division									
New England	76.0	71.3	74.2	77.2	70.5	62.5	59.1	70.3	72.4
Middle Atlantic	86.0	79.8	79.4	72.6	70.2	64.1	66.5	67.6	67.5
East North Central	97.1	95.2	89.5	78.4	77.2	74.0	76.6	75.5	78.1
West North Central	106.0	95.5	92.7	85.5	89.8	80.6	78.9	80.0	82.5
South Atlantic	94.2	90.6	88.2	80.6	79.5	77.2	78.4	74.8	78.7
East South Central	132.1	117.0	108.5	87.9	90.1	94.8	93.7	92.5	95.1
West South Central	100.5	94.2	102.5	91.4	87.0	80.8	78.8	81.6	84.3
Mountain	96.8	91.7	81.8	84.4	75.2	73.6	67.3	75.7	77.0
Pacific	95.8	86.7	80.8	77.7	70.1	65.0	67.5	75.6	72.2
Type of Practice									
Solo	94.0	86.0	85.4	81.2	79.3	76.6	78.7	79.2	82.7
Non-solo	97.5	93.2	87.8	79.2	75.8	69.6	69.0	72.9	72.9
Location									
Nonmetropolitan	122.4	109.2	107.3	106.0	97.3	96.9	92.9	92.5	97.2
Metropolitan—									
Less than 1,000,000	97.8	94.5	91.0	82.8	82.1	77.0	76.6	78.5	80.6
1,000,000 and over	86.8	80.6	78.4	72.1	67.8	64.1	66.5	69.1	69.1
Physician Age									
Less than 36 years	87.0	76.0	73.8	64.3	68.2	63.0	59.7	69.8	70.0
36-45 years	91.8	87.5	85.7	76.9	73.1	66.7	69.9	72.7	75.0
46-55 years	105.2	99.3	97.0	87.7	85.0	83.1	79.4	81.3	81.1
56-65 years	102.5	98.3	92.8	90.5	87.1	83.7	83.5	80.5	83.6
66 or more years	76.3	70.7	70.7	79.8	66.7	63.9	69.8	71.1	69.5

Source: 1982-87, AMA Socioeconomic Monitoring System core surveys. 1978-80, AMA Periodic Surveys of Physicians. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. Data, other than in the specialty breakdown, are based on responses from physicians in all specialties except radiology, psychiatry, anesthesiology, and pathology. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 18 (continued). **Standard Error of the Mean Number of Office Visits per Week, 1978-80, 1982-87**[a]

	1978	1979	1980	1982	1983	1984	1985	1986	1987
All Physicians	1.24	1.08	0.95	1.12	1.10	1.04	1.05	1.07	1.02
Specialty									
General/Family Practice	2.63	2.25	1.97	2.52	2.31	2.26	2.17	2.37	2.38
Internal Medicine	2.36	1.72	1.38	2.14	1.98	1.96	2.11	1.96	1.69
Surgery	1.88	1.74	1.40	1.49	1.89	1.75	1.76	1.93	1.75
Pediatrics	4.11	3.44	3.48	3.67	3.95	3.55	3.53	3.53	3.53
Obstetrics/Gynecology	3.36	3.84	2.36	2.89	2.68	2.67	2.32	2.58	2.53
Census Division									
New England	3.42	3.29	3.62	4.51	3.56	4.03	3.98	4.48	3.92
Middle Atlantic	2.81	2.23	2.39	2.92	3.14	2.58	2.69	2.33	2.29
East North Central	2.94	2.48	2.47	2.53	2.54	2.65	2.77	2.70	2.62
West North Central	5.08	5.92	3.34	4.24	5.19	3.75	3.65	3.61	3.41
South Atlantic	3.29	2.51	2.31	2.65	2.59	2.46	2.38	2.70	2.57
East South Central	7.53	6.12	4.98	4.76	4.95	4.89	5.29	5.03	5.32
West South Central	4.38	3.72	3.56	4.15	3.70	3.44	3.44	3.26	3.41
Mountain	5.52	4.57	3.56	4.93	4.40	4.60	4.12	4.48	4.37
Pacific	2.64	2.47	1.91	2.58	2.23	2.25	2.32	2.73	2.30
Type of Practice									
Solo	1.67	1.36	1.28	1.51	1.59	1.42	1.53	1.46	1.47
Non-solo	1.81	1.70	1.40	1.67	1.53	1.51	1.44	1.52	1.41
Location									
Nonmetropolitan	4.46	3.13	3.03	3.83	3.11	2.98	3.02	3.00	3.10
Metropolitan—									
Less than 1,000,000	1.86	1.64	1.41	1.69	1.72	1.64	1.65	1.66	1.62
1,000,000 and over	1.68	1.57	1.37	1.56	1.57	1.45	1.50	1.54	1.41
Physician Age									
Less than 36 years	4.54	2.61	2.53	2.73	2.98	2.71	2.49	3.02	2.97
36-45 years	2.26	1.84	1.84	2.00	1.89	1.82	1.78	1.65	1.74
46-55 years	2.33	2.02	1.93	2.37	2.61	2.28	2.33	2.33	2.21
56-65 years	2.63	2.88	1.99	2.54	2.34	2.25	2.50	2.69	2.20
66 or more years	3.22	2.58	2.34	3.14	2.43	2.66	2.84	3.26	2.90

Table 19. **Mean Number of Visits on Hospital Rounds per Week, 1987**[a]

	All Physicians[b]	Specialty General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	25.1	16.9	37.0	28.1	21.6	19.9
Census Division						
New England	20.1	12.4	27.6	25.8	.	.
Middle Atlantic	27.2	16.4	37.9	31.5	19.2	15.5
East North Central	27.9	16.9	41.9	31.1	29.6	20.7
West North Central	28.8	24.5	46.8	26.1	.	.
South Atlantic	26.1	14.3	42.1	31.1	13.2	19.9
East South Central	34.5	27.1	49.2	34.2	.	.
West South Central	26.0	19.9	45.0	22.4	26.5	28.4
Mountain	20.5	16.0	23.9	28.3	.	.
Pacific	16.3	9.3	19.9	21.9	17.7	15.6
Type of Practice						
Solo	21.9	17.1	32.3	21.8	13.3	16.8
Non-solo	27.5	16.7	40.0	34.7	25.2	22.5
Location						
Nonmetropolitan	26.0	23.3	46.2	27.1	19.2	24.6
Metropolitan—						
Less than 1,000,000	27.5	14.8	42.5	31.3	23.1	24.9
1,000,000 and over	22.6	15.3	31.8	25.1	20.9	15.3
Employment Status						
Self-employed	26.5	18.3	39.6	26.7	17.2	20.2
Employee	20.8	12.1	28.8	37.1	28.5	18.5
Physician Age						
Less than 36 years	24.0	16.9	35.3	26.1	25.1	19.4
36-45 years	28.5	18.4	40.8	31.9	24.6	22.1
46-55 years	26.1	16.2	40.0	28.5	18.7	19.3
56-65 years	21.0	20.1	26.8	24.5	17.2	17.7
66 or more years	16.2	9.5	25.1	21.0	.	.

Source: 1987 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

b. Excludes physicians in radiology, psychiatry, anesthesiology, and pathology, but otherwise includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 19 (continued). **Standard Error of the Mean Number of Visits on Hospital Rounds per Week , 1987[a]**

		Specialty				
	All Physicians[b]	General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	0.61	0.84	1.56	1.24	1.91	1.08
Census Division						
New England	1.84	3.19	3.60	3.71		
Middle Atlantic	1.75	2.56	3.42	4.58	4.02	1.79
East North Central	1.74	2.08	4.57	3.15	7.46	2.85
West North Central	2.47	2.80	8.20	3.35		
South Atlantic	1.51	1.80	3.96	3.20	2.75	2.27
East South Central	2.93	4.55	6.23	5.25		
West South Central	1.73	2.41	6.48	2.72	5.14	4.33
Mountain	1.79	2.70	3.93	4.76		
Pacific	0.97	1.40	1.78	2.20	4.06	1.61
Type of Practice						
Solo	0.74	1.18	2.07	1.32	1.28	1.46
Non-solo	0.92	1.22	2.19	2.08	2.60	1.54
Location						
Nonmetropolitan	1.57	1.94	5.68	3.58	3.05	3.80
Metropolitan—						
Less than 1,000,000	0.99	1.21	2.84	1.78	2.11	2.12
1,000,000 and over	0.88	1.39	1.82	1.93	3.23	0.98
Employment Status						
Self-employed	0.68	0.97	1.85	1.17	1.24	1.18
Employee	1.36	1.67	2.70	5.29	4.43	2.55
Physician Age						
Less than 36 years	1.64	1.99	3.39	4.59	4.42	3.75
36-45 years	1.17	1.56	2.34	2.88	4.14	1.80
46-55 years	1.28	2.06	4.15	1.99	3.02	2.26
56-65 years	0.97	1.85	2.83	1.95	2.74	2.18
66 or more years	1.77	1.86	5.98	2.73		

Table 20. **Mean Number of Visits on Hospital Rounds per Week , 1982-87**[a]

	1982	1983	1984	1985	1986	1987
All Physicians	32.3	32.9	28.4	27.2	25.8	25.1
Specialty						
General/Family Practice	28.8	28.3	24.4	22.0	18.0	16.9
Internal Medicine	41.1	42.8	37.6	35.3	37.7	37.0
Surgery	40.8	39.2	33.9	31.9	27.7	28.1
Pediatrics	24.6	25.3	18.6	21.0	21.1	21.6
Obstetrics/Gynecology	27.4	27.3	23.9	23.7	23.7	19.9
Census Division						
New England	27.3	30.3	26.1	22.5	20.9	20.1
Middle Atlantic	31.7	34.4	30.8	29.5	27.2	27.2
East North Central	37.7	36.5	30.3	27.5	29.5	27.9
West North Central	37.9	39.6	35.2	27.5	26.3	28.8
South Atlantic	35.4	31.8	28.5	27.5	27.6	26.1
East South Central	44.3	47.8	37.5	44.3	33.7	34.5
West South Central	34.2	39.1	32.9	33.9	28.0	26.0
Mountain	27.5	26.4	22.6	22.4	21.7	20.5
Pacific	19.9	21.0	18.3	17.6	17.1	16.3
Type of Practice						
Solo	29.1	28.7	25.9	23.9	22.6	21.9
Non-solo	35.7	36.5	30.7	30.0	28.3	27.5
Location						
Nonmetropolitan	43.1	42.9	36.6	32.4	26.4	26.0
Metropolitan—						
Less than 1,000,000	35.1	34.9	30.2	29.4	29.1	27.5
1,000,000 and over	27.1	28.4	24.9	24.1	22.7	22.6
Physician Age						
Less than 36 years	33.8	30.9	28.3	25.7	27.6	24.0
36-45 years	33.7	36.2	30.9	29.3	28.7	28.5
46-55 years	34.4	35.1	31.1	30.5	27.0	26.1
56-65 years	31.4	30.7	25.4	24.9	21.2	21.0
66 or more years	19.6	19.5	17.1	15.6	16.3	16.2

Source: 1982-87, AMA Socioeconomic Monitoring System core surveys. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. Data, other than in the specialty breakdown, are based on responses from physicians in all specialties except radiology, psychiatry, anesthesiology, and pathology. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 20 (continued). **Standard Error of the Mean Number of Visits on Hospital Rounds per Week, 1982-87**[a]

	1982	1983	1984	1985	1986	1987
All Physicians	0.76	0.72	0.61	0.67	0.65	0.61
Specialty						
General/Family Practice	1.31	1.26	1.20	1.14	0.94	0.84
Internal Medicine	1.88	1.75	1.64	1.90	1.70	1.56
Surgery	1.58	1.49	1.23	1.39	1.27	1.24
Pediatrics	2.18	2.19	1.22	1.91	2.34	1.91
Obstetrics/Gynecology	1.51	1.91	1.18	1.25	1.26	1.08
Census Division						
New England	2.77	2.66	2.37	2.14	2.05	1.84
Middle Atlantic	1.93	2.20	1.74	2.02	1.70	1.75
East North Central	2.01	1.74	1.62	1.54	1.94	1.74
West North Central	2.72	2.45	2.45	2.04	2.42	2.47
South Atlantic	1.98	1.59	1.46	1.50	1.81	1.51
East South Central	3.60	4.26	2.99	3.95	2.63	2.93
West South Central	2.46	2.55	1.91	2.50	1.88	1.73
Mountain	2.64	2.50	1.98	2.34	2.06	1.79
Pacific	1.39	1.10	1.03	1.04	1.07	0.97
Type of Practice						
Solo	1.01	0.91	0.82	0.81	0.77	0.74
Non-solo	1.15	1.10	0.90	1.03	1.00	0.92
Location						
Nonmetropolitan	2.23	2.29	1.92	2.13	1.48	1.57
Metropolitan—						
Less than 1,000,000	1.24	1.17	0.96	1.12	1.15	0.99
1,000,000 and over	1.04	0.96	0.86	0.89	0.86	0.88
Physician Age						
Less than 36 years	2.11	1.88	1.68	1.71	2.37	1.64
36-45 years	1.37	1.37	1.16	1.17	1.10	1.17
46-55 years	1.67	1.63	1.40	1.61	1.45	1.28
56-65 years	1.75	1.39	1.14	1.42	1.09	0.97
66 or more years	1.33	1.56	1.28	1.24	1.30	1.77

Table 21. **Mean Number of Surgical Procedures per Week, 1987**[a]

		Specialty				
	All Physicians[b]	General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	3.5	1.1	1.5	8.2	0.9	8.2
Census Division						
New England	2.9	1.6	0.5	9.3	.	.
Middle Atlantic	2.7	0.4	0.8	7.3	0.4	6.9
East North Central	4.2	1.3	2.2	9.8	0.3	10.6
West North Central	4.1	2.2	1.7	9.4	.	.
South Atlantic	3.6	0.3	2.7	8.2	0.7	7.6
East South Central	3.3	0.7	1.5	8.1	.	.
West South Central	3.8	1.4	1.7	7.6	1.7	7.9
Mountain	3.9	2.2	0.7	8.4	.	.
Pacific	3.4	1.2	1.1	7.2	1.2	8.1
Type of Practice						
Solo	3.5	1.2	1.1	7.3	1.1	7.0
Non-solo	3.5	1.0	1.8	9.2	0.8	9.2
Location						
Nonmetropolitan	3.7	1.7	0.2	8.8	1.4	10.5
Metropolitan—						
Less than 1,000,000	3.8	0.8	1.9	8.8	1.5	9.3
1,000,000 and over	3.2	1.1	1.4	7.6	0.4	7.0
Employment Status						
Self-employed	4.0	1.3	1.6	8.2	1.0	8.2
Employee	2.2	0.7	1.4	8.3	0.7	8.2
Physician Age						
Less than 36 years	2.8	1.5	1.5	8.6	0.4	7.7
36-45 years	3.6	1.1	1.9	8.6	1.0	9.3
46-55 years	4.5	1.3	1.8	8.6	1.4	8.5
56-65 years	3.1	1.2	0.5	7.8	0.3	6.4
66 or more years	2.3	0.7	0.3	5.8	.	6.6

Source: 1987 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

b. Excludes physicians in radiology, psychiatry, anesthesiology, and pathology, but otherwise includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 21 (continued). **Standard Error of the Mean Number of Surgical Procedures per Week, 1987[a]**

		Specialty				
	All Physicians[b]	General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	0.11	0.09	0.21	0.21	0.16	0.31
Census Division						
New England	0.40	0.80	0.21	0.88	.	.
Middle Atlantic	0.23	0.16	0.25	0.57	0.16	0.68
East North Central	0.33	0.26	0.82	0.59	0.14	0.95
West North Central	0.45	0.32	1.09	0.94	.	.
South Atlantic	0.26	0.13	0.63	0.51	0.27	0.65
East South Central	0.44	0.37	0.78	0.84	.	.
West South Central	0.29	0.24	0.63	0.60	0.70	0.73
Mountain	0.38	0.45	0.51	0.63	.	.
Pacific	0.23	0.19	0.37	0.39	0.51	0.81
Type of Practice						
Solo	0.14	0.14	0.24	0.26	0.29	0.41
Non-solo	0.15	0.12	0.31	0.32	0.19	0.46
Location						
Nonmetropolitan	0.29	0.21	0.24	0.62	0.43	0.91
Metropolitan—						
Less than 1,000,000	0.18	0.11	0.42	0.34	0.36	0.53
1,000,000 and over	0.14	0.18	0.23	0.28	0.10	0.41
Employment Status						
Self-employed	0.12	0.11	0.25	0.22	0.20	0.33
Employee	0.19	0.16	0.40	0.69	0.26	0.94
Physician Age						
Less than 36 years	0.29	0.26	0.57	0.81	0.18	0.89
36-45 years	0.18	0.14	0.32	0.35	0.28	0.54
46-55 years	0.24	0.29	0.65	0.34	0.40	0.64
56-65 years	0.22	0.19	0.35	0.50	0.14	0.56
66 or more years	0.28	0.19	0.14	0.81	.	1.27

Table 22. **Mean Number of Surgical Procedures per Week, 1982-87**[a]

	1982	1983	1984	1985	1986	1987
All Physicians	3.1	3.3	3.2	3.0	3.5	3.5
Specialty						
General/Family Practice	1.4	1.4	1.1	1.1	1.2	1.1
Internal Medicine	0.5	0.7	0.8	0.7	1.1	1.5
Surgery	7.0	7.5	7.6	7.1	8.3	8.2
Pediatrics	0.5	0.7	0.7	0.6	0.7	0.9
Obstetrics/Gynecology	8.2	8.0	7.6	7.2	8.5	8.2
Census Division						
New England	2.8	2.9	3.0	2.4	2.7	2.9
Middle Atlantic	2.8	3.2	2.9	2.7	3.0	2.7
East North Central	3.4	3.9	3.6	2.7	3.8	4.2
West North Central	3.9	3.4	4.3	3.4	3.9	4.1
South Atlantic	3.1	3.1	3.3	3.1	3.6	3.6
East South Central	3.5	3.7	3.5	3.8	4.3	3.3
West South Central	3.2	3.7	3.5	3.5	3.6	3.8
Mountain	3.3	3.5	3.0	3.7	3.9	3.9
Pacific	2.8	2.8	2.5	2.7	3.1	3.4
Type of Practice						
Solo	2.7	3.2	3.0	2.9	3.2	3.5
Non-solo	3.6	3.4	3.4	3.1	3.7	3.5
Location						
Nonmetropolitan	3.3	3.3	3.4	3.2	3.4	3.7
Metropolitan—						
Less than 1,000,000	3.4	3.8	3.7	3.3	4.1	3.8
1,000,000 and over	2.8	2.8	2.7	2.7	3.0	3.2
Physician Age						
Less than 36 years	2.4	2.3	2.3	2.0	3.1	2.8
36-45 years	3.5	3.5	3.5	3.3	3.5	3.6
46-55 years	3.6	3.9	3.7	3.7	4.3	4.5
56-65 years	3.0	3.4	3.3	2.8	3.0	3.1
66 or more years	1.7	1.7	2.0	1.5	2.5	2.3

Source: 1982-87, AMA Socioeconomic Monitoring System core surveys. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. Data, other than in specialty breakdown, include physicians in all specialties except psychiatry, radiology, anesthesiology and pathology. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 22 (continued). **Standard Error of the Mean Number of Surgical Procedures per Week, 1982-87**[a]

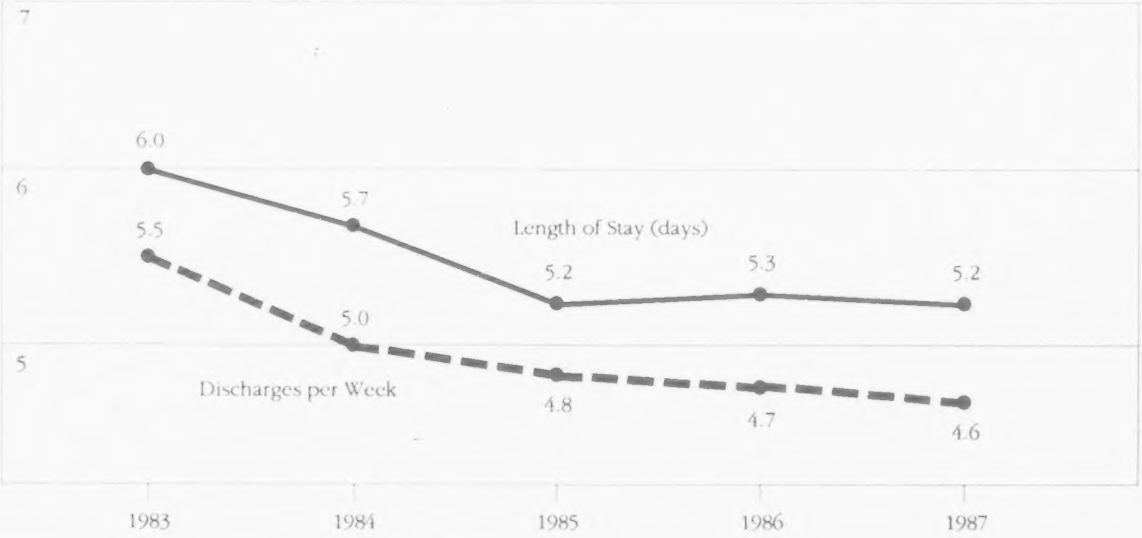
	1982	1983	1984	1985	1986	1987
All Physicians	0.10	0.10	0.10	0.09	0.11	0.11
Specialty						
General/Family Practice	0.17	0.11	0.08	0.14	0.09	0.09
Internal Medicine	0.11	0.17	0.13	0.11	0.20	0.21
Surgery	0.21	0.19	0.19	0.18	0.25	0.21
Pediatrics	0.09	0.12	0.09	0.10	0.10	0.16
Obstetrics/Gynecology	0.35	0.31	0.27	0.27	0.35	0.31
Census Division						
New England	0.39	0.39	0.43	0.35	0.43	0.40
Middle Atlantic	0.26	0.27	0.31	0.20	0.27	0.23
East North Central	0.28	0.29	0.23	0.20	0.30	0.33
West North Central	0.36	0.36	0.42	0.35	0.41	0.45
South Atlantic	0.24	0.23	0.24	0.20	0.33	0.26
East South Central	0.44	0.39	0.38	0.50	0.51	0.44
West South Central	0.30	0.26	0.28	0.40	0.28	0.29
Mountain	0.41	0.60	0.34	0.37	0.41	0.38
Pacific	0.28	0.18	0.18	0.23	0.20	0.23
Type of Practice						
Solo	0.12	0.14	0.12	0.13	0.13	0.14
Non-solo	0.18	0.14	0.16	0.13	0.17	0.15
Location						
Nonmetropolitan	0.23	0.23	0.26	0.27	0.29	0.29
Metropolitan—						
Less than 1,000,000	0.18	0.17	0.16	0.16	0.19	0.18
1,000,000 and over	0.14	0.14	0.14	0.12	0.14	0.14
Physician Age						
Less than 36 years	0.32	0.23	0.21	0.20	0.35	0.29
36-45 years	0.21	0.19	0.21	0.17	0.17	0.18
46-55 years	0.22	0.23	0.20	0.23	0.27	0.24
56-65 years	0.19	0.20	0.19	0.18	0.22	0.22
66 or more years	0.17	0.18	0.21	0.16	0.30	0.28

Hospital Utilization by Physicians

Physicians have a significant influence on the utilization of hospital resources. Two measures indicating the extent of hospital utilization of physicians' patients are the number of patients discharged from the hospital and the average length of their hospital stays.

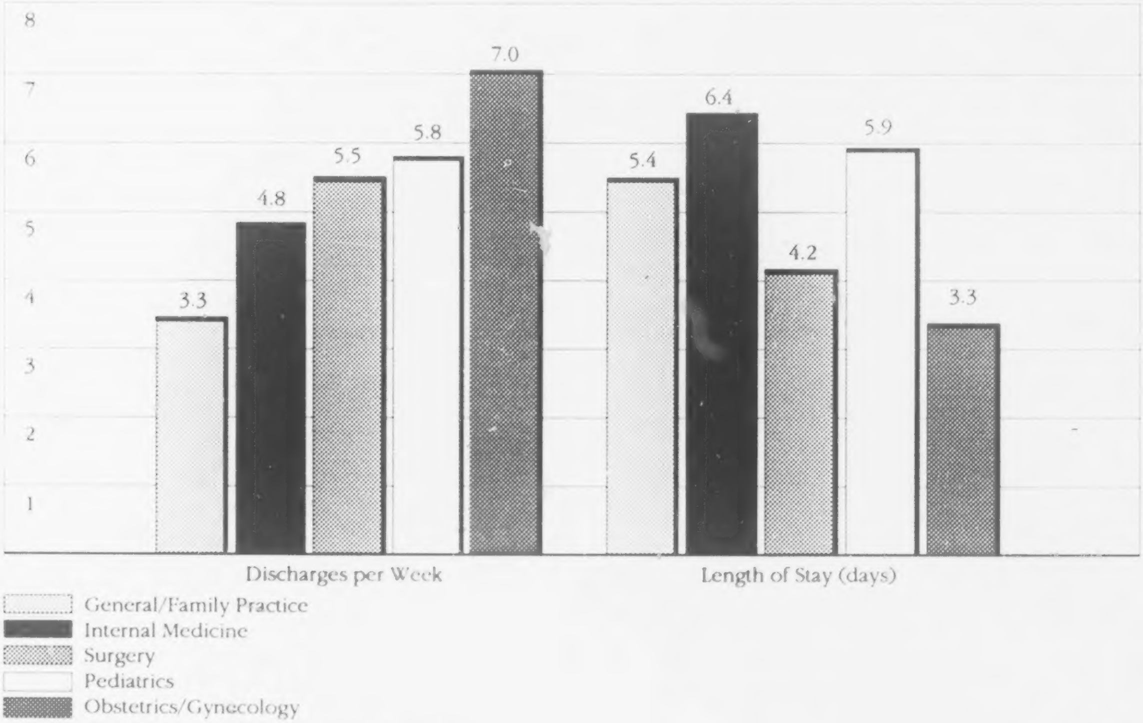
Declining hospital utilization is reflected in the trend for both the average number of discharges per physician per week and the length of stay of patients (see Figure 7). However, it appears that hospital utilization may be leveling off. While weekly discharges declined from 5.5 to 4.8 and length of stay declined from an average of 6.0 to 5.2 between 1983 and 1985, changes were much more moderate from 1985 to 1987. Figure 8 shows average discharge rates and lengths of stay of physicians by specialty. General/family practitioners have the fewest hospitalized patients, but their patients have the third longest average lengths of stay. At the other extreme, obstetricians/gynecologists have the most hospitalized patients and their patients have the shortest stays. Figure 9 indicates that geographic differences in average hospital lengths of stay are substantial.

Figure 7. **Average Hospital Discharges per Week and Length of Stay (in days) of Discharged Patients for All Physicians, 1983-1987**[a]



Source: AMA Socioeconomic Monitoring System 1983-1987 core surveys.
a. Excludes physicians in psychiatry, radiology, anesthesiology, and pathology.

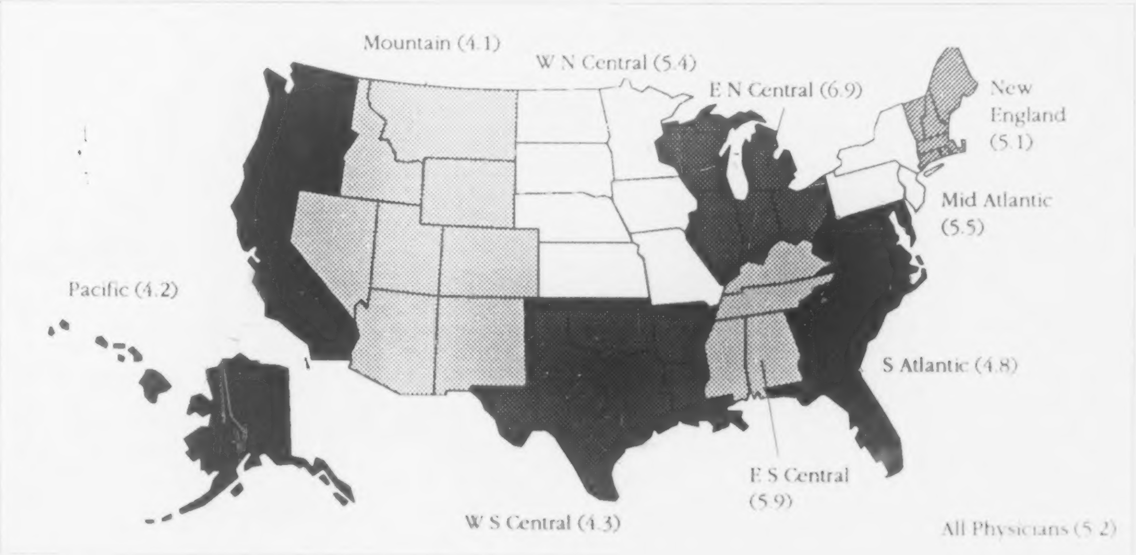
Figure 8. **Average Hospital Discharges per Week and Length of Stay (in days) of Discharged Patients by Specialty, 1987[a]**



Source: AMA Socioeconomic Monitoring System 1987 core survey.

a. Excludes physicians in psychiatry, radiology, anesthesiology, and pathology.

Figure 9. **Average Length of Hospital Stay (in days) per Discharged Patient by Census Division, 1987[a]**


Mountain (4.1)
W N Central (5.4)
E N Central (6.9)
New England (5.1)
Mid Atlantic (5.5)
Pacific (4.2)
S Atlantic (4.8)
E S Central (5.9)
W S Central (4.3)
All Physicians (5.2)

Source: AMA Socioeconomic Monitoring System 1987 core survey.

a. Excludes physicians in psychiatry, radiology, anesthesiology, and pathology.

Table 23. **Mean Number of Patients Discharged from the Hospital per Week, 1987[a]**

	All Physicians[b]	Specialty				
		General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	4.6	3.3	4.8	5.5	5.8	7.0
Census Division						
New England	3.5	2.1	3.8	5.4	.	.
Middle Atlantic	4.2	2.5	3.9	5.1	6.5	6.9
East North Central	4.5	3.2	5.2	5.5	5.2	7.2
West North Central	5.4	4.6	6.1	6.2	.	.
South Atlantic	4.9	2.4	6.2	5.8	3.9	7.4
East South Central	6.4	7.8	6.3	5.8	.	.
West South Central	5.0	4.2	4.3	5.1	8.7	7.0
Mountain	4.5	3.6	4.0	5.8	.	.
Pacific	3.9	1.7	3.7	5.0	6.1	5.4
Type of Practice						
Solo	4.2	3.3	4.0	4.6	4.8	6.3
Non-solo	4.9	3.4	5.3	6.3	6.2	7.7
Location						
Nonmetropolitan	6.0	5.2	6.4	6.6	5.9	9.2
Metropolitan—						
Less than 1,000,000	5.0	3.1	5.8	6.0	5.8	8.2
1,000,000 and over	3.9	2.3	3.8	4.7	5.8	5.7
Employment Status						
Self-employed	5.1	3.8	5.3	5.5	5.7	7.4
Employee	3.2	1.8	3.0	5.4	5.9	5.1
Physician Age						
Less than 36 years	3.8	3.6	3.9	3.8	5.0	5.3
36-45 years	5.0	3.2	5.6	5.7	6.4	8.2
46-55 years	5.3	3.8	5.2	6.0	6.1	6.9
56-65 years	4.2	3.8	3.3	5.5	4.4	6.5
66 or more years	2.8	1.9	2.5	3.8	.	4.9

Source: 1987 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

b. Excludes physicians in radiology, psychiatry, anesthesiology, and pathology, but otherwise includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 23 (continued). **Standard Error of the Mean Number of Patients Discharged from the Hospital per Week, 1987[a]**

		Specialty				
	All Physicians[b]	General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	0.13	0.21	0.30	0.20	0.58	0.35
Census Division						
New England	0.34	0.49	0.67	0.61		
Middle Atlantic	0.36	0.40	0.45	0.45	2.33	1.18
East North Central	0.24	0.36	0.58	0.48	0.77	0.75
West North Central	0.40	0.58	0.88	0.84		
South Atlantic	0.38	0.29	1.33	0.42	0.64	0.73
East South Central	0.62	1.95	0.79	0.83		
West South Central	0.38	0.52	0.58	0.74	1.24	0.66
Mountain	0.41	0.67	0.65	0.92		
Pacific	0.32	0.22	0.42	0.47	1.48	0.56
Type of Practice						
Solo	0.14	0.26	0.24	0.22	0.52	0.43
Non-solo	0.20	0.33	0.47	0.32	0.79	0.53
Location						
Nonmetropolitan	0.42	0.67	0.69	0.69	1.04	1.11
Metropolitan—						
Less than 1,000,000	0.21	0.25	0.63	0.33	0.54	0.62
1,000,000 and over	0.18	0.20	0.27	0.23	1.01	0.41
Employment Status						
Self-employed	0.14	0.26	0.37	0.21	0.43	0.38
Employee	0.29	0.23	0.41	0.50	1.33	0.71
Physician Age	0.31	0.45	0.41	0.55	0.68	0.85
Less than 36 years	0.27	0.23	0.61	0.35	1.36	0.70
36-45 years	0.26	0.85	0.54	0.36	0.89	0.52
46-55 years	0.22	0.42	0.38	0.50	0.61	0.77
56-65 years	0.20	0.30	0.29	0.39		0.82
66 or more years						

Table 24. **Mean Number of Patients Discharged from the Hospital per Week, 1983-87[a]**

	1983	1984	1985	1986	1987
All Physicians	5.5	5.0	4.8	4.7	4.6
Specialty					
General/Family Practice	4.5	4.0	3.9	3.3	3.3
Internal Medicine	5.2	4.6	4.7	4.8	4.8
Surgery	6.1	6.1	5.4	5.3	5.5
Pediatrics	5.8	5.7	5.1	6.1	5.8
Obstetrics/Gynecology	7.7	6.7	6.8	7.4	7.0
Census Division					
New England	6.0	4.0	3.7	4.2	3.5
Middle Atlantic	5.1	4.2	4.5	4.6	4.2
East North Central	6.1	6.3	5.2	5.0	4.5
West North Central	5.9	5.7	5.8	4.7	5.4
South Atlantic	5.4	5.1	4.9	5.0	4.9
East South Central	7.1	6.5	7.0	7.0	6.4
West South Central	6.7	5.8	5.9	5.6	5.0
Mountain	4.7	5.0	3.6	4.0	4.5
Pacific	4.0	3.4	3.4	3.4	3.9
Type of Practice					
Solo	4.8	4.4	4.2	4.3	4.2
Non-solo	6.1	5.5	5.2	5.1	4.9
Location					
Nonmetropolitan	7.1	6.8	6.1	5.5	6.0
Metropolitan—					
Less than 1,000,000	6.0	5.3	4.9	5.5	5.0
1,000,000 and over	4.6	4.3	4.3	3.9	3.9
Physician Age					
Less than 36 years	5.4	5.1	5.5	4.4	3.8
36-45 years	5.7	5.4	4.9	5.0	5.0
46-55 years	5.7	5.3	5.0	5.2	5.3
56-65 years	5.8	4.3	4.4	4.1	4.2
66 or more years	3.2	2.9	2.9	4.2	2.8

Source: 1983-87, AMA Socioeconomic Monitoring System core surveys. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. Data, other than in specialty breakdown, include physicians in all specialties except psychiatry, radiology, anesthesiology, and pathology. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 24 (continued). **Standard Error of the Mean Number of Patients Discharged from the Hospital per Week, 1983-87[a]**

	1983	1984	1985	1986	1987
All Physicians	0.15	0.14	0.15	0.14	0.13
Specialty					
General/Family Practice	0.20	0.18	0.21	0.17	0.21
Internal Medicine	0.27	0.20	0.34	0.21	0.30
Surgery	0.20	0.19	0.19	0.22	0.20
Pediatrics	0.46	0.43	0.32	0.57	0.58
Obstetrics/Gynecology	0.41	0.33	0.33	0.46	0.35
Census Division					
New England	1.09	0.38	0.40	0.70	0.34
Middle Atlantic	0.45	0.26	0.35	0.48	0.36
East North Central	0.35	0.62	0.55	0.24	0.24
West North Central	0.36	0.33	0.59	0.45	0.40
South Atlantic	0.31	0.31	0.31	0.37	0.38
East South Central	0.57	0.53	0.54	0.67	0.62
West South Central	0.54	0.32	0.55	0.44	0.38
Mountain	0.58	0.68	0.39	0.37	0.41
Pacific	0.24	0.17	0.18	0.21	0.32
Type of Practice					
Solo	0.16	0.13	0.14	0.15	0.14
Non-solo	0.25	0.25	0.25	0.22	0.20
Location					
Nonmetropolitan	0.35	0.36	0.37	0.34	0.42
Metropolitan—					
Less than 1,000,000	0.25	0.17	0.20	0.24	0.21
1,000,000 and over	0.21	0.25	0.24	0.19	0.18
Physician Age					
Less than 36 years	0.47	0.43	0.58	0.29	0.31
36-45 years	0.28	0.32	0.29	0.25	0.27
46-55 years	0.24	0.22	0.21	0.25	0.26
56-65 years	0.38	0.19	0.25	0.27	0.22
66 or more years	0.23	0.21	0.22	0.67	0.20

Table 25. **Mean Number of Days for Hospital Stays per Patient, 1987**[a]

		Specialty				
	All Physicians[b]	General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	5.2	5.4	6.4	4.2	5.9	3.3
Census Division						
New England	5.1	.	7.1	3.7	.	.
Middle Atlantic	5.5	5.4	6.8	4.8	3.9	3.2
East North Central	6.9	5.1	8.3	4.6	15.5	3.4
West North Central	5.4	6.7	5.8	4.0	.	.
South Atlantic	4.8	5.7	5.5	4.4	3.6	3.4
East South Central	5.9	7.7	5.9	4.2	.	
West South Central	4.3	4.4	5.2	3.9	4.2	3.6
Mountain	4.1	4.9	.	3.5	.	.
Pacific	4.2	4.5	5.5	3.7	3.7	3.0
Type of Practice						
Solo	4.8	5.0	6.5	3.8	3.7	3.2
Non-solo	5.6	5.8	6.2	4.6	6.9	3.3
Location						
Nonmetropolitan	4.6	5.4	5.0	4.0	.	3.3
Metropolitan—						
Less than 1,000,000	5.6	5.5	6.7	4.3	8.4	3.3
1,000,000 and over	5.0	5.2	6.3	4.1	4.3	3.2
Employment Status						
Self-employed	4.8	4.9	6.2	4.1	3.5	3.3
Employee	7.1	8.0	7.0	5.0	10.9	3.2
Physician Age						
Less than 36 years	4.7	4.6	5.6	4.3	4.0	.
36-45 years	5.5	4.5	6.5	4.1	8.5	3.1
46-55 years	5.1	6.2	6.3	4.2	4.9	3.2
56-65 years	4.9	5.3	6.4	4.5	3.0	3.6
66 or more years	5.6	7.8	6.6	3.7	.	.

Source: 1987 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

b. Excludes physicians in radiology, psychiatry, anesthesiology, and pathology, but otherwise includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 25 (continued). **Standard Error of the Mean Number of Days for Hospital Stays per Patient, 1987**[a]

	All Physicians[b]	Specialty General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	0.20	0.40	0.26	0.11	1.48	0.07
Census Division						
New England	0.45	.	0.94	0.43	.	.
Middle Atlantic	0.20	0.42	0.27	0.47	0.29	0.14
East North Central	1.08	0.28	1.41	0.33	8.63	0.14
West North Central	0.65	2.15	0.55	0.32	.	.
South Atlantic	0.14	0.53	0.20	0.21	0.42	0.13
East South Central	0.89	3.29	0.42	0.40	.	.
West South Central	0.20	0.23	0.35	0.24	1.18	0.23
Mountain	0.34	1.13	.	0.32	.	.
Pacific	0.16	0.43	0.29	0.22	0.79	0.20
Type of Practice						
Solo	0.15	0.20	0.54	0.13	0.39	0.09
Non-solo	0.34	0.84	0.23	0.18	2.14	0.10
Location						
Nonmetropolitan	0.40	0.90	0.27	0.25	.	0.20
Metropolitan—						
Less than 1,000,000	0.42	0.75	0.54	0.17	3.54	0.11
1,000,000 and over	0.12	0.23	0.23	0.17	0.44	0.09
Employment Status						
Self-employed	0.10	0.16	0.29	0.11	0.25	0.07
Employee	1.05	2.44	0.60	0.45	4.59	0.20
Physician Age						
Less than 36 years	0.23	0.38	0.27	0.59	1.02	.
36-45 years	0.47	0.27	0.53	0.20	3.90	0.09
46-55 years	0.23	1.47	0.33	0.19	0.70	0.13
56-65 years	0.15	0.34	0.38	0.24	0.15	0.15
66 or more years	0.67	2.56	0.46	0.37	.	.

Table 26. **Mean Number of Days for Hospital Stays per Patient, 1983-87**[a]

	1983	1984	1985	1986	1987
All Physicians	6.0	5.7	5.2	5.3	5.2
Specialty					
General/Family Practice	7.7	5.2	5.1	5.3	5.4
Internal Medicine	7.3	7.4	6.5	6.6	6.4
Surgery	4.7	4.4	4.3	4.0	4.2
Pediatrics	4.4	5.1	4.5	4.7	5.9
Obstetrics/Gynecology	3.8	3.8	3.4	3.5	3.3
Census Division					
New England	7.4	7.1	5.2	5.5	5.1
Middle Atlantic	6.6	6.6	5.8	6.1	5.5
East North Central	5.9	5.5	5.7	5.5	6.9
West North Central	5.7	5.2	5.1	4.8	5.4
South Atlantic	6.6	6.1	5.2	5.4	4.8
East South Central	5.3	5.8	5.9	6.5	5.9
West South Central	4.9	5.9	4.5	4.7	4.3
Mountain	5.5	4.7	4.1	4.5	4.1
Pacific	5.8	4.4	4.4	4.4	4.2
Type of Practice					
Solo	5.3	5.1	4.8	4.8	4.8
Non-solo	6.7	6.3	5.5	5.6	5.6
Location					
Nonmetropolitan	5.1	4.6	4.4	4.9	4.6
Metropolitan—					
Less than 1,000,000	5.8	5.4	5.2	5.4	5.6
1,000,000 and over	6.5	6.3	5.4	5.3	5.0
Physician Age					
Less than 36 years	5.7	5.4	5.0	5.1	4.7
36-45 years	5.5	5.9	5.2	5.2	5.5
46-55 years	6.1	5.4	5.0	5.2	5.1
56-65 years	6.7	5.5	5.1	5.2	4.9
66 or more years	7.1	6.9	5.7	6.5	5.6

Source: 1983-87, AMA Socioeconomic Monitoring System core surveys. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. Data, other than in specialty breakdown, include physicians in all specialties except psychiatry, radiology, anesthesiology, and pathology. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 26 (continued). **Standard Error of the Mean Number of Days for Hospital Stays per Patient, 1983-87[a]**

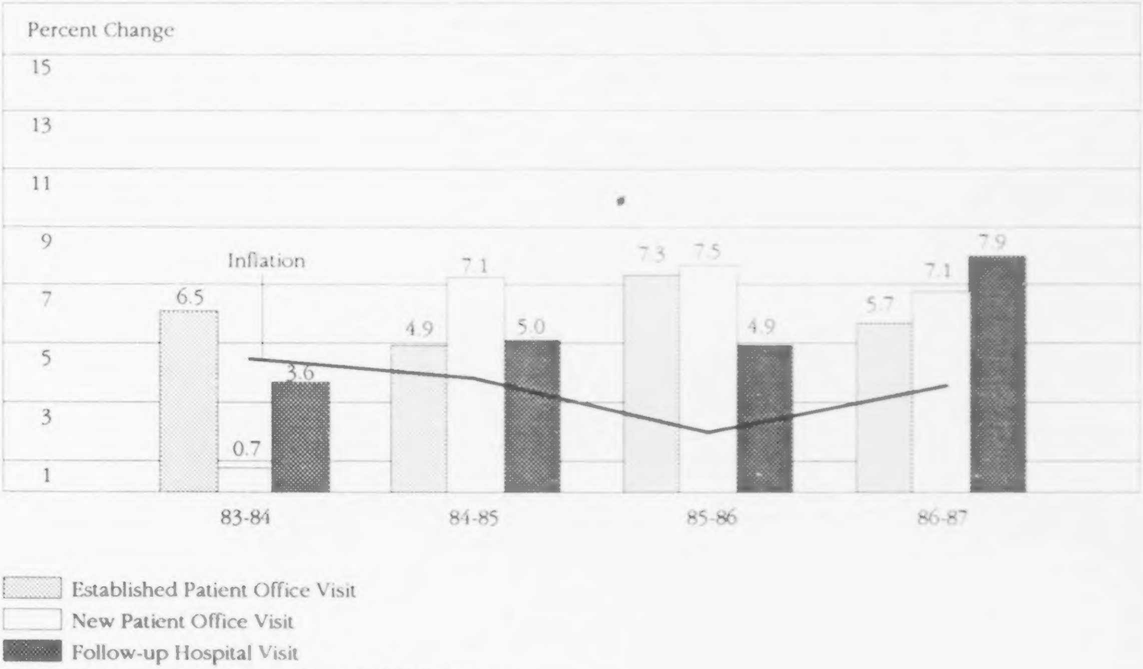
	1983	1984	1985	1986	1987
All Physicians	0.27	0.18	0.10	0.14	0.20
Specialty					
General/Family Practice	1.19	0.18	0.19	0.21	0.40
Internal Medicine	0.32	0.48	0.18	0.26	0.26
Surgery	0.13	0.10	0.14	0.10	0.11
Pediatrics	0.31	0.65	0.43	0.62	1.48
Obstetrics/Gynecology	0.09	0.08	0.07	0.14	0.07
Census Division					
New England	1.62	1.18	0.44	0.57	0.45
Middle Atlantic	0.33	0.31	0.30	0.45	0.20
East North Central	0.22	0.22	0.30	0.26	1.08
West North Central	0.37	0.28	0.37	0.29	0.65
South Atlantic	0.85	0.55	0.22	0.35	0.14
East South Central	0.25	0.58	0.53	1.11	0.89
West South Central	0.17	1.00	0.15	0.22	0.20
Mountain	0.45	0.64	0.24	0.36	0.34
Pacific	1.18	0.21	0.24	0.18	0.16
Type of Practice					
Solo	0.11	0.10	0.11	0.10	0.15
Non-solo	0.50	0.35	0.17	0.24	0.34
Location					
Nonmetropolitan	0.14	0.09	0.12	0.34	0.40
Metropolitan—					
Less than 1,000,000	0.36	0.25	0.17	0.23	0.42
1,000,000 and over	0.49	0.33	0.16	0.19	0.12
Physician Age					
Less than 36 years	0.28	0.34	0.21	0.32	0.23
36-45 years	0.17	0.40	0.20	0.22	0.47
46-55 years	0.79	0.32	0.19	0.23	0.23
56-65 years	0.79	0.21	0.22	0.26	0.15
66 or more years	0.69	0.98	0.30	0.89	0.67

Fees for Physician Visits

Office visits with new and established patients and follow-up hospital visits are the most commonly billed physician services and account for a large proportion of physician revenue. Fees reported for these services are "current usual fees" and, therefore, may not reflect discounts allowed under some circumstances, such as assigned Medicare services and services to patients covered by preferred provider organization contracts.

As shown in Figure 10, fees for all three types of visits increased faster than the 3.6% rate of inflation (measured by the All Items Consumer Price Index for Urban Consumers) from 1986 to 1987. Figure 11 indicates that in 1987 the average fee for an established patient office visit reached $31.82 for the entire nation, but ranged from $26.28 in the West North Central states to $37.52 in the Pacific Census Division. Variations in relative fees by type of visit and specialty, using the national average established patient office visit fee as the base of comparison, are shown in Figure 12.

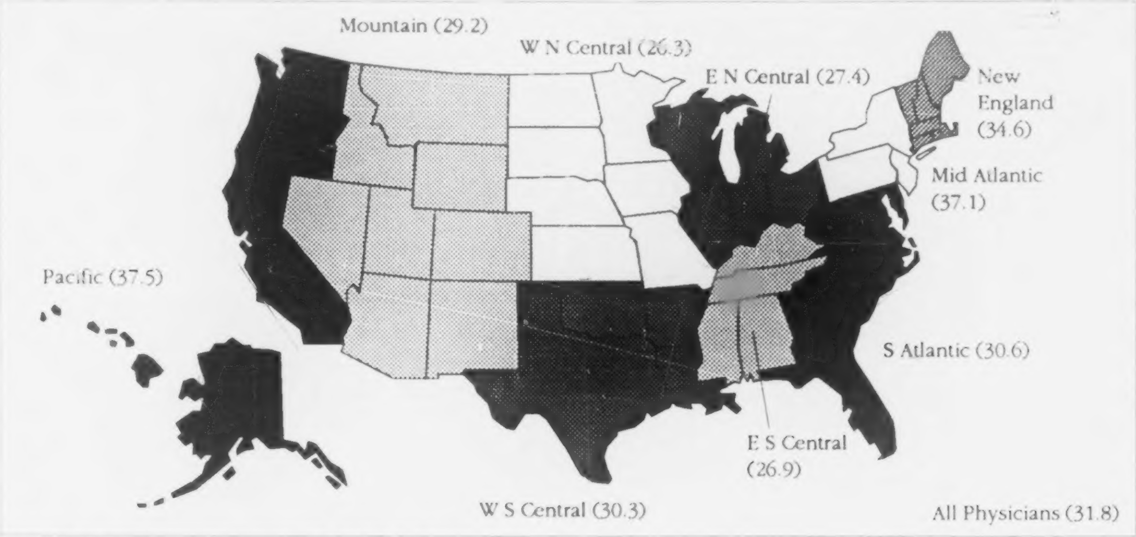
Figure 10. **Percent Change in Average Fees for Selected Types of Visits for All Physicians, 1983-1987**[a]



Source: AMA Socioeconomic Monitoring System 1983-1987 core surveys.

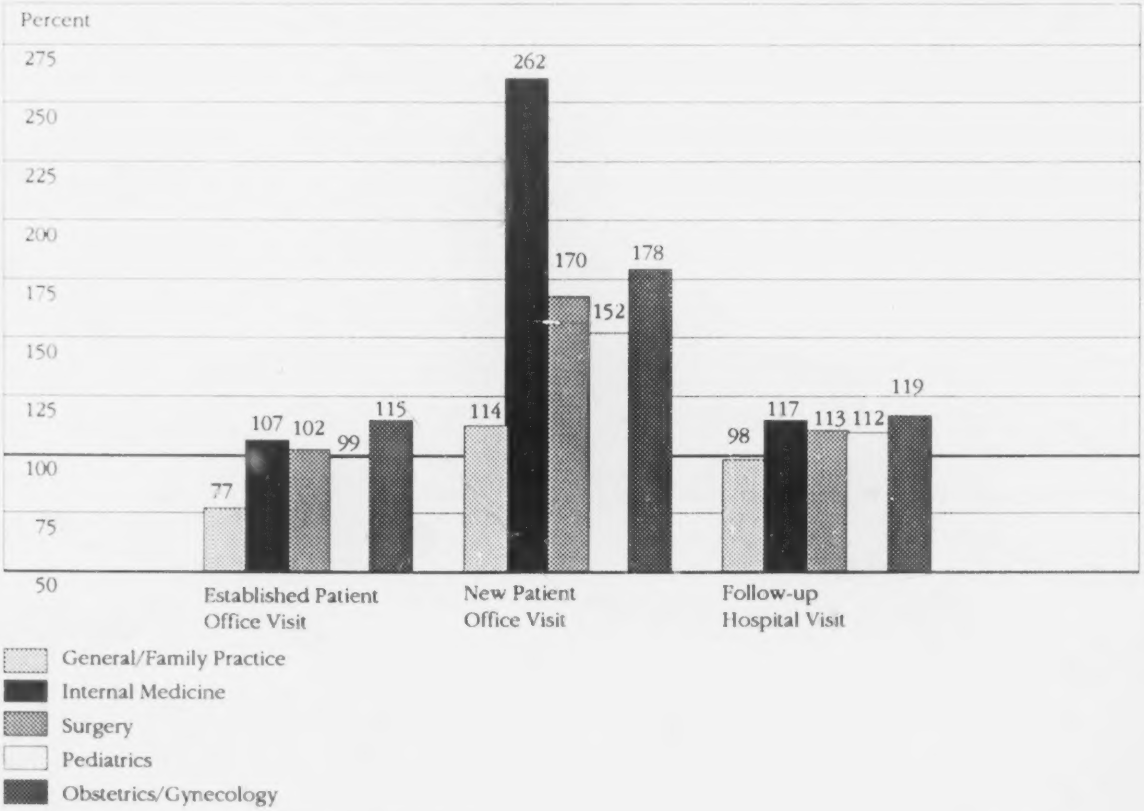
a. Excludes physicians in psychiatry, radiology, anesthesiology, and pathology.

Figure 11. **Average Fee (in dollars) for an Established Patient Office Visit by Census Division, 1987[a]**


Mountain (29.2)
W N Central (26.3)
E N Central (27.4)
New England (34.6)
Mid Atlantic (37.1)
Pacific (37.5)
S Atlantic (30.6)
E S Central (26.9)
W S Central (30.3)
All Physicians (31.8)

Source: AMA Socioeconomic Monitoring System 1987 core survey.
a. Excludes physicians in psychiatry, radiology, anesthesiology, and pathology.

Figure 12. **Average Fees by Type of Visit and Specialty as a Percent of the Average Fee for an Established Patient Office Visit for All Physicians, 1987[a]**



Source: AMA Socioeconomic Monitoring System 1987 core survey.
a. Excludes physicians in psychiatry, radiology, anesthesiology, and pathology.

Table 27. **Mean Fee (in dollars) for an Office Visit with an Established Patient, 1987[a]**

		Specialty				
	All Physicians[b]	General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	31.82	24.52	34.11	32.51	31.57	36.65
Census Division						
New England	34.59	.	35.34	34.74	.	.
Middle Atlantic	37.13	24.42	37.15	39.96	35.19	41.97
East North Central	27.37	21.89	29.24	28.32	24.51	30.38
West North Central	26.28	21.02	29.12	25.03	.	.
South Atlantic	30.64	24.27	31.65	31.76	33.57	36.31
East South Central	26.86	21.74	29.15	29.56	.	.
West South Central	30.25	23.74	36.22	30.78	29.88	35.89
Mountain	29.24	23.73	31.11	31.46	.	.
Pacific	37.52	32.13	41.62	35.99	36.72	41.89
Type of Practice						
Solo	31.54	24.31	34.21	33.19	29.93	36.52
Non-solo	32.09	24.77	34.04	31.75	32.53	36.78
Location						
Nonmetropolitan	23.04	20.73	24.21	26.02	22.81	24.96
Metropolitan—						
Less than 1,000,000	29.51	24.53	31.71	29.09	29.48	34.12
1,000,000 and over	36.38	27.56	37.24	37.57	35.03	40.68
Employment Status						
Self-employed	31.57	24.40	34.09	32.47	29.68	36.66
Employee	33.17	25.17	34.26	32.87	37.50	36.61
Physician Age						
Less than 36 years	29.90	23.55	31.14	33.56	28.26	32.38
36-45 years	31.93	24.73	33.53	32.18	34.67	35.58
46-55 years	32.35	24.81	35.40	32.34	27.06	35.95
56-65 years	31.88	24.72	34.24	33.34	32.27	40.36
66 or more years	31.96	24.15	38.67	32.02	.	.

Source: 1987 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

b. Excludes physicians in radiology, psychiatry, anesthesiology, and pathology, but otherwise includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 27 (continued). **Standard Error of the Mean Fee (in dollars) for an Office Visit with an Established Patient, 1987**[a]

	All Physicians[b]	Specialty				
		General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	0.26	0.31	0.59	0.47	0.88	0.81
Census Division						
New England	0.99		1.51	1.94		
Middle Atlantic	0.78	0.93	1.38	1.60	2.39	1.93
East North Central	0.54	0.45	1.52	0.91	1.12	1.39
West North Central	0.82	0.58	1.87	1.19		
South Atlantic	0.51	0.65	0.85	0.86	2.39	2.00
East South Central	0.91	1.15	2.13	2.03		
West South Central	0.71	0.65	2.23	1.20	2.21	2.45
Mountain	0.79	0.87	1.78	1.86		
Pacific	0.78	1.18	2.03	1.24	2.32	2.08
Type of Practice						
Solo	0.38	0.46	0.91	0.68	1.42	1.02
Non-solo	0.37	0.40	0.78	0.65	1.12	1.28
Location						
Nonmetropolitan	0.42	0.39	1.23	1.19	1.07	1.20
Metropolitan—						
Less than 1,000,000	0.35	0.48	0.87	0.56	1.10	1.13
1,000,000 and over	0.43	0.58	0.82	0.77	1.45	1.20
Employment Status						
Self-employed	0.28	0.35	0.65	0.50	0.80	0.87
Employee	0.73	0.71	1.41	1.51	2.57	2.10
Physician Age						
Less than 36 years	0.65	0.60	1.16	1.87	1.38	1.96
36-45 years	0.44	0.51	0.79	0.86	1.88	1.43
46-55 years	0.55	0.79	1.53	0.79	0.84	1.53
56-65 years	0.61	0.73	1.63	1.16	1.94	1.75
66 or more years	0.94	0.88	2.46	1.37		

Table 28. **Mean Fee (in dollars) for an Office Visit with an Established Patient, 1978-80, 1982-87**[a]

	1978	1979	1980	1982	1983	1984	1985	1986	1987
All Physicians	15.26	17.21	18.50	23.49	25.11	26.74	28.05	30.10	31.82
Specialty									
General/Family Practice	12.23	13.77	15.25	18.38	19.86	20.76	22.06	23.48	24.52
Internal Medicine	16.76	19.81	20.41	26.75	28.18	30.37	30.43	34.03	34.11
Surgery	15.99	17.60	19.07	23.62	24.58	26.07	28.73	29.66	32.51
Pediatrics	13.75	15.62	16.41	21.57	23.37	24.65	25.13	27.37	31.57
Obstetrics/Gynecology	18.09	19.02	20.72	26.65	29.42	31.49	32.41	34.81	36.65
Census Division									
New England	15.42	17.38	19.52	23.56	26.87	28.53	30.10	33.14	34.59
Middle Atlantic	17.47	18.69	20.34	26.26	28.34	30.46	32.51	34.85	37.13
East North Central	13.59	15.51	16.66	20.34	21.31	23.70	24.90	27.33	27.37
West North Central	11.88	13.43	14.52	18.64	19.10	21.87	21.75	24.06	26.28
South Atlantic	15.48	17.37	18.27	23.72	26.04	25.76	27.11	29.69	30.64
East South Central	12.66	15.23	15.42	20.98	21.16	21.14	23.13	23.55	26.86
West South Central	14.42	16.31	16.60	22.21	24.16	26.43	25.72	28.46	30.25
Mountain	13.46	16.25	16.84	22.89	22.43	24.58	25.39	27.05	29.24
Pacific	17.33	19.59	21.90	27.66	29.30	31.52	33.61	34.93	37.52
Type of Practice									
Solo	15.22	17.26	18.43	22.99	24.68	26.38	27.96	29.54	31.54
Non-solo	15.33	17.15	18.59	24.08	25.55	27.16	28.16	30.67	32.09
Location									
Nonmetropolitan	11.35	13.39	13.41	17.65	18.98	19.39	20.70	22.11	23.04
Metropolitan—									
Less than 1,000,000	14.25	15.60	16.72	21.85	23.64	25.26	25.44	27.50	29.51
1,000,000 and over	17.11	19.59	21.11	26.59	28.37	30.09	32.21	34.73	36.38
Physician Age									
Less than 36 years	15.06	17.44	18.65	23.15	25.84	25.76	27.94	28.53	29.90
36-45 years	15.74	17.19	18.90	23.87	25.27	27.99	28.92	30.89	31.93
46-55 years	15.50	17.59	18.84	24.60	25.53	26.82	27.42	30.13	32.35
56-65 years	14.85	17.43	17.88	22.41	24.09	25.89	28.35	31.13	31.88
66 or more years	14.53	15.81	17.85	21.84	24.27	24.81	26.07	26.85	31.96

Source: 1982-87, AMA Socioeconomic Monitoring System core surveys. 1978-80, AMA Periodic Surveys of Physicians. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. Data, other than in the specialty breakdown, are based on responses from physicians in all specialties except radiology, psychiatry, anesthesiology, and pathology. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 28 (continued). **Standard Error of the Mean Fee (in dollars) for an Office Visit with an Established Patient , 1978-80, 1982-87**[a]

	1978	1979	1980	1982	1983	1984	1985	1986	1987
All Physicians	0.11	0.15	0.14	0.24	0.23	0.24	0.26	0.29	0.26
Specialty									
General/Family Practice	0.12	0.12	0.14	0.34	0.31	0.30	0.29	0.31	0.31
Internal Medicine	0.25	0.48	0.24	0.67	0.63	0.67	0.60	0.83	0.59
Surgery	0.24	0.24	0.32	0.40	0.40	0.41	0.57	0.52	0.47
Pediatrics	0.23	0.29	0.20	0.50	0.60	0.53	0.50	0.61	0.88
Obstetrics/Gynecology	0.43	0.41	0.55	0.62	0.72	0.73	0.65	0.75	0.81
Census Division									
New England	0.36	0.47	0.55	0.80	0.82	0.99	1.37	1.19	0.99
Middle Atlantic	0.38	0.33	0.32	0.66	0.71	0.70	0.83	0.76	0.78
East North Central	0.17	0.23	0.23	0.38	0.35	0.47	0.62	0.88	0.54
West North Central	0.30	0.32	0.27	0.60	0.46	0.74	0.60	0.73	0.82
South Atlantic	0.26	0.59	0.26	0.58	0.67	0.47	0.51	0.69	0.51
East South Central	0.33	0.39	0.34	0.94	0.75	0.62	0.79	0.81	0.91
West South Central	0.34	0.38	0.27	0.60	0.53	0.82	0.52	0.58	0.71
Mountain	0.50	0.53	0.41	1.04	0.90	0.95	0.80	0.78	0.79
Pacific	0.26	0.35	0.51	0.78	0.61	0.73	0.69	0.74	0.78
Type of Practice									
Solo	0.15	0.23	0.17	0.31	0.31	0.33	0.37	0.42	0.38
Non-solo	0.17	0.16	0.21	0.37	0.35	0.36	0.37	0.39	0.37
Location									
Nonmetropolitan	0.26	0.75	0.16	0.45	0.46	0.41	0.42	0.41	0.42
Metropolitan—									
Less than 1,000,000	0.14	0.14	0.13	0.33	0.33	0.34	0.29	0.36	0.35
1,000,000 and over	0.18	0.21	0.24	0.39	0.36	0.39	0.45	0.49	0.43
Physician Age									
Less than 36 years	0.41	0.39	0.38	0.63	0.73	0.70	0.59	0.61	0.65
36-45 years	0.23	0.25	0.20	0.42	0.40	0.48	0.46	0.45	0.44
46-55 years	0.20	0.23	0.28	0.57	0.51	0.48	0.49	0.59	0.55
56-65 years	0.23	0.45	0.22	0.46	0.45	0.47	0.69	0.93	0.61
66 or more years	0.31	0.34	0.60	0.61	0.64	0.66	0.80	0.69	0.94

Table 29. **Mean Fee (in dollars) for an Office Visit with a New Patient, 1987[a]**

		Specialty				
	All Physicians[b]	General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	59.69	36.19	83.45	53.95	48.29	56.61
Census Division						
New England	63.82	.	80.14	53.98	.	.
Middle Atlantic	68.40	35.25	84.53	62.01	53.07	59.32
East North Central	50.64	30.81	71.55	45.21	40.68	45.46
West North Central	51.07	30.92	76.57	43.18	.	.
South Atlantic	58.29	33.84	83.54	51.95	54.93	57.29
East South Central	48.63	32.71	71.61	45.21	.	.
West South Central	51.71	33.51	87.89	46.61	46.70	52.53
Mountain	53.24	36.30	.	56.80	.	.
Pacific	75.75	54.85	103.54	69.93	55.05	68.71
Type of Practice						
Solo	58.24	37.61	85.05	53.40	40.77	58.27
Non-solo	61.04	34.50	82.21	54.58	52.40	55.01
Location						
Nonmetropolitan	37.02	29.38	59.44	38.78	.	37.53
Metropolitan—						
Less than 1,000,000	55.85	35.23	82.28	48.21	42.96	53.41
1,000,000 and over	69.30	43.26	87.22	63.43	55.95	62.60
Employment Status						
Self-employed	58.92	36.37	83.73	53.52	41.32	56.90
Employee	63.70	35.25	82.00	57.58	68.71	54.77
Physician Age						
Less than 36 years	53.89	35.08	69.94	48.14	38.28	53.10
36-45 years	61.63	37.21	83.16	52.08	54.00	55.59
46-55 years	61.66	36.61	86.43	57.68	43.10	56.96
56-65 years	58.30	35.17	89.60	55.38	48.95	59.99
66 or more years	54.88	36.10	87.48	49.80	.	.

Source: 1987 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

b. Excludes physicians in radiology, psychiatry, anesthesiology, and pathology, but otherwise includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 29 (continued). **Standard Error of the Mean Fee (in dollars) for an Office Visit with a New Patient, 1987[a]**

	All Physicians[b]	Specialty				
		General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	0.79	0.86	2.01	1.14	2.18	1.16
Census Division						
New England	4.31	.	8.99	4.20	.	.
Middle Atlantic	2.13	2.79	4.43	2.92	5.49	2.47
East North Central	1.58	1.23	4.01	1.87	5.73	2.41
West North Central	2.51	1.39	5.46	3.23	.	.
South Atlantic	1.69	1.88	4.18	2.05	6.55	2.58
East South Central	2.23	2.94	5.64	2.95	.	.
West South Central	2.13	1.53	9.77	1.60	6.39	3.12
Mountain	2.64	3.12	.	4.50	.	.
Pacific	2.47	3.69	5.45	4.66	4.80	2.69
Type of Practice						
Solo	1.15	1.36	3.51	1.45	2.35	1.59
Non-solo	1.10	0.96	2.32	1.80	3.06	1.70
Location						
Nonmetropolitan	1.10	0.89	5.28	1.75	.	2.18
Metropolitan—						
Less than 1,000,000	1.10	1.20	3.21	1.17	2.51	1.36
1,000,000 and over	1.30	1.98	2.77	2.12	3.77	1.84
Employment Status						
Self-employed	0.85	0.99	2.20	1.22	1.61	1.24
Employee	2.19	1.41	5.04	3.20	6.74	3.52
Physician Age						
Less than 36 years	1.99	2.10	4.41	2.14	3.34	4.72
36-45 years	1.30	1.79	2.77	1.62	4.41	1.89
46-55 years	1.59	1.81	4.47	2.21	3.50	2.12
56-65 years	1.99	1.65	7.21	3.34	4.72	2.65
66 or more years	2.56	2.34	7.13	2.96	.	.

Table 30. **Mean Fee (in dollars)for an Office Visit with a New Patient, 1978-80, 1982-87**[a]

	1978	1979	1980	1982	1983	1984	1985	1986	1987
All Physicians	25.38	28.31	30.89	43.43	48.08	48.43	51.87	55.75	59.69
Specialty									
General/Family Practice	16.74	18.37	20.58	26.81	30.22	29.98	31.72	34.61	36.19
Internal Medicine	33.09	37.89	40.05	62.78	69.54	68.95	74.00	79.19	83.45
Surgery	26.61	28.93	31.96	42.32	42.67	44.49	48.28	50.20	53.95
Pediatrics	19.20	20.99	22.00	30.32	35.62	35.37	34.55	40.00	48.29
Obstetrics/Gynecology	29.56	30.69	34.01	44.60	47.87	46.85	51.62	52.98	56.61
Census Division									
New England	23.48	26.86	31.06	38.74	49.50	48.00	49.91	52.24	63.82
Middle Atlantic	28.68	30.83	33.20	48.57	53.96	54.26	58.65	65.62	68.40
East North Central	23.24	25.54	26.95	36.51	41.08	43.28	42.68	47.35	50.64
West North Central	19.36	21.37	23.41	34.04	37.16	36.10	43.28	43.07	51.07
South Atlantic	25.79	28.54	30.94	44.63	47.19	46.78	49.13	54.96	58.29
East South Central	21.69	25.35	25.23	40.07	37.75	34.75	41.37	39.79	48.63
West South Central	25.14	27.31	27.90	41.38	42.23	46.06	49.96	51.86	51.71
Mountain	21.46	25.18	29.10	39.08	42.56	44.53	44.69	49.52	53.24
Pacific	29.13	33.16	38.42	53.85	63.25	63.15	68.86	73.80	75.75
Type of Practice									
Solo	24.93	28.19	29.91	42.01	45.55	46.53	50.73	54.71	58.24
Non-solo	26.07	28.46	32.07	45.14	50.68	50.62	53.13	56.81	61.04
Location									
Nonmetropolitan	17.12	19.17	19.29	28.85	31.07	32.23	32.28	34.95	37.02
Metropolitan—									
Less than 1,000,000	23.90	25.98	27.90	41.00	44.54	45.01	47.93	50.43	55.85
1,000,000 and over	28.71	32.63	35.91	49.46	56.36	55.95	60.36	66.34	69.30
Physician Age									
Less than 36 years	27.47	29.45	32.19	44.09	51.14	47.02	52.30	53.50	53.89
36-45 years	27.93	29.82	32.56	45.85	48.87	51.75	54.02	58.14	61.63
46-55 years	24.36	28.71	31.47	43.72	49.04	48.43	52.27	55.06	61.66
56-65 years	23.68	27.23	28.69	39.80	44.19	45.01	49.41	57.93	58.30
66 or more years	22.51	24.65	28.52	40.00	45.37	44.23	46.97	45.96	54.88

Source: 1982-87, AMA Socioeconomic Monitoring System core surveys. 1978-80, AMA Periodic Surveys of Physicians. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. Data, other than in the specialty breakdown, are based on responses from physicians in all specialties except radiology, psychiatry, anesthesiology, and pathology. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 30 (continued). **Standard Error of the Mean Fee (in dollars) for an Office Visit with a New Patient,, 1978-80, 1982-87**[a]

	1978	1979	1980	1982	1983	1984	1985	1986	1987
All Physicians	0.29	0.32	0.33	0.62	0.71	0.64	0.72	0.81	0.79
Specialty									
General/Family Practice	0.29	0.28	0.26	0.66	0.75	0.69	0.72	0.99	0.86
Internal Medicine	0.90	0.98	0.95	1.84	2.11	1.89	2.22	2.12	2.01
Surgery	0.48	0.52	0.56	0.88	0.93	0.90	1.01	1.09	1.14
Pediatrics	0.60	0.60	0.48	1.18	1.68	1.23	1.17	2.15	2.18
Obstetrics/Gynecology	0.66	0.58	0.74	1.62	1.76	0.99	1.11	1.20	1.16
Census Division									
New England	0.81	1.19	1.30	2.31	2.64	2.35	2.52	2.47	4.31
Middle Atlantic	0.85	0.80	0.80	1.63	1.88	1.88	1.88	2.25	2.13
East North Central	0.57	0.72	0.58	1.12	1.48	1.33	1.37	1.61	1.58
West North Central	0.91	0.87	0.90	1.84	1.90	1.77	2.53	2.26	2.51
South Atlantic	0.73	0.90	0.71	1.58	1.66	1.43	1.44	2.00	1.69
East South Central	1.09	1.09	0.94	2.11	1.72	1.52	2.48	1.88	2.23
West South Central	1.10	1.03	1.29	2.23	1.37	1.83	2.60	2.23	2.13
Mountain	0.91	1.00	1.51	2.07	3.10	2.31	2.20	2.59	2.64
Pacific	0.72	0.88	0.94	1.87	2.43	1.99	2.17	2.66	2.47
Type of Practice									
Solo	0.36	0.46	0.41	0.83	0.96	0.85	0.97	1.16	1.15
Non-solo	0.48	0.45	0.52	0.95	1.04	0.98	1.07	1.14	1.10
Location									
Nonmetropolitan	0.60	0.84	0.42	1.04	1.09	1.05	0.96	1.38	1.10
Metropolitan—									
Less than 1,000,000	0.39	0.46	0.40	0.82	0.89	0.83	0.98	0.97	1.10
1,000,000 and over	0.47	0.53	0.54	1.07	1.27	1.11	1.19	1.42	1.30
Physician Age									
Less than 36 years	1.25	1.01	1.19	1.95	2.21	1.90	1.85	2.30	1.99
36-45 years	0.66	0.62	0.60	1.06	1.12	1.20	1.20	1.22	1.30
46-55 years	0.44	0.60	0.71	1.24	1.46	1.29	1.51	1.69	1.59
56-65 years	0.58	0.72	0.55	1.23	1.34	1.27	1.73	2.52	1.99
66 or more years	0.61	0.83	0.83	2.28	3.14	1.96	2.20	1.57	2.56

Table 31. **Mean Fee (in dollars) for a Follow-up Hospital Visit, 1987**[a]

		Specialty				
	All Physicians[b]	General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	35.73	31.29	37.33	35.97	35.70	37.92
Census Division						
New England	35.83	.	36.30	38.21	.	.
Middle Atlantic	41.96	34.55	41.18	46.39	38.17	45.56
East North Central	30.84	29.07	31.34	31.19	28.92	32.96
West North Central	29.17	25.05	32.96	28.93	.	.
South Atlantic	36.82	34.94	36.72	35.87	44.84	37.03
East South Central	29.37	27.5[illegible]	30.14	27.62	.	.
West South Central	34.21	30.48	37.49	35.23	32.55	36.87
Mountain	31.80	26.27	.	32.60	.	.
Pacific	42.23	38.96	45.68	41.65	38.74	41.32
Type of Practice						
Solo	35.71	31.73	38.01	36.44	32.95	37.59
Non-solo	35.75	30.74	36.82	35.48	37.30	38.23
Location						
Nonmetropolitan	28.08	25.96	31.00	30.13	.	.
Metropolitan—						
Less than 1,000,000	32.94	31.12	34.41	31.16	33.74	33.65
1,000,000 and over	40.67	36.44	40.63	42.60	38.44	44.45
Employment Status						
Self-employed	35.56	31.35	37.14	35.88	34.00	38.34
Employee	36.75	30.86	38.38	36.78	40.03	.
Physician Age						
Less than 36 years	34.94	29.28	36.80	37.91	37.12	.
36-45 years	35.80	31.90	36.97	35.36	36.27	37.98
46-55 years	36.49	30.56	38.59	37.01	32.96	38.23
56-65 years	35.86	32.64	37.03	36.26	38.67	41.10
66 or more years	33.13	29.67	37.09	30.97	.	.

Source: 1987 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

b. Excludes physicians in radiology, psychiatry, anesthesiology, and pathology, but otherwise includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 31 (continued). **Standard Error of the Mean Fee (in dollars) for a Follow-up Hospital Visit, 1987**[a]

		Specialty				
	All Physicians[b]	General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	0.39	0.68	0.67	0.82	1.13	1.48
Census Division						
New England	1.20	.	1.66	3.06	.	.
Middle Atlantic	1.13	2.33	1.61	3.07	2.62	3.73
East North Central	0.69	1.41	1.26	1.43	1.94	2.41
West North Central	1.22	1.57	2.64	2.44	.	.
South Atlantic	1.06	1.88	1.83	2.06	4.52	4.65
East South Central	1.22	2.58	2.30	1.73	.	.
West South Central	0.88	1.42	1.66	2.11	2.23	3.25
Mountain	1.25	1.47	.	2.90	.	.
Pacific	1.14	2.46	1.65	2.22	2.64	2.81
Type of Practice						
Solo	0.56	0.94	1.08	1.18	1.70	1.99
Non-solo	0.54	1.00	0.86	1.13	1.48	2.18
Location						
Nonmetropolitan	0.94	0.94	2.92	2.57	.	.
Metropolitan—						
Less than 1,000,000	0.53	1.09	0.96	0.84	1.85	1.76
1,000,000 and over	0.61	1.30	0.94	1.43	1.51	2.37
Employment Status						
Self-employed	0.41	0.70	0.70	0.85	1.27	1.57
Employee	1.10	2.43	2.12	2.85	2.34	.
Physician Age						
Less than 36 years	1.05	1.20	2.03	2.57	3.50	.
36-45 years	0.62	1.30	0.92	1.40	1.89	2.23
46-55 years	0.82	1.65	1.52	1.53	1.74	2.92
56-65 years	0.97	1.47	2.30	1.88	3.74	3.64
66 or more years	1.11	1.66	2.21	2.27	.	.

Table 32. **Mean Fee (in dollars) for a Follow-up Hospital Visit, 1978-80, 1982-87**[a]

	1978	1979	1980	1982	1983	1984	1985	1986	1987
All Physicians	22.53	24.17	26.95	24.04	29.04	30.08	31.59	33.13	35.73
Specialty									
General/Family Practice	18.05	19.16	22.20	21.76	24.62	24.80	26.80	27.04	31.29
Internal Medicine	23.76	25.12	27.99	28.39	31.65	33.61	34.06	35.19	37.33
Surgery	24.17	25.23	29.30	21.96	28.29	29.26	30.69	33.42	35.97
Pediatrics	20.78	22.96	23.05	25.69	27.71	29.55	30.69	33.32	35.70
Obstetrics/Gynecology	24.99	27.14	27.82	21.43	31.59	30.81	33.56	34.82	37.92
Census Division									
New England	19.37	22.60	25.51	21.63	26.88	31.02	30.01	30.72	35.83
Middle Atlantic	25.66	27.52	30.25	27.11	31.84	36.78	37.96	38.20	41.96
East North Central	20.92	20.97	23.90	21.58	26.73	27.35	28.87	30.80	30.84
West North Central	17.56	18.53	21.00	18.85	22.07	23.57	24.03	26.54	29.17
South Atlantic	23.74	25.79	27.40	23.46	29.18	29.59	30.65	34.26	36.82
East South Central	18.90	19.92	21.07	19.47	21.81	22.53	24.60	26.33	29.37
West South Central	20.28	24.28	24.49	23.95	29.54	28.45	30.85	31.21	34.21
Mountain	19.03	22.44	23.84	25.82	25.11	27.19	29.70	30.30	31.80
Pacific	26.35	26.67	32.61	29.31	36.17	34.68	36.52	38.38	42.23
Type of Practice									
Solo	22.94	24.37	27.17	24.50	29.86	30.67	32.31	33.73	35.71
Non-solo	21.93	23.93	26.69	23.54	28.23	29.46	30.84	32.55	35.75
Location									
Nonmetropolitan	17.11	17.78	19.56	19.96	22.17	23.19	24.57	25.18	28.08
Metropolitan—									
Less than 1,000,000	20.75	22.10	24.13	22.33	26.53	27.28	27.88	29.68	32.94
1,000,000 and over	25.49	27.70	31.00	27.00	33.65	34.64	36.63	38.65	40.67
Physician Age									
Less than 36 years	22.06	25.05	27.72	24.92	29.24	29.28	30.74	33.46	34.94
36-45 years	24.33	24.85	26.92	24.14	29.03	30.41	33.21	33.55	35.80
46-55 years	21.94	24.65	26.99	25.17	29.54	30.27	30.68	33.23	36.49
56-65 years	21.32	22.94	27.78	22.11	28.96	30.43	30.56	33.57	35.86
66 or more years	22.02	22.44	24.61	22.96	26.93	28.00	30.70	29.03	33.13

Source: 1982-87, AMA Socioeconomic Monitoring System core surveys. 1978-80, AMA Periodic Surveys of Physicians. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. Data, other than in the specialty breakdown, are based on responses from physicians in all specialties except radiology, psychiatry, anesthesiology, and pathology. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 32 (continued). **Standard Error of the Mean Fee (in dollars) for a Follow-up Hospital Visit , 1978-80, 1982-87**[a]

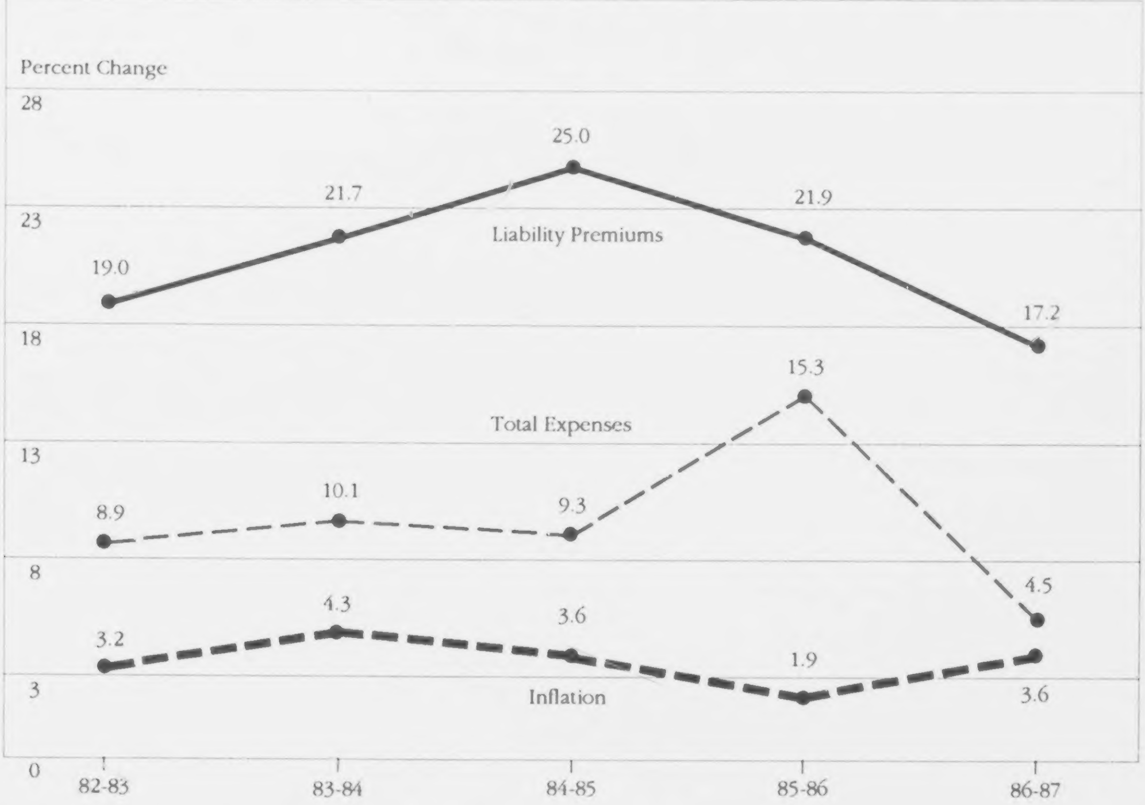
	1978	1979	1980	1982	1983	1984	1985	1986	1987
All Physicians	0.27	0.28	0.44	0.32	0.39	0.35	0.36	0.36	0.39
Specialty									
General/Family Practice	0.38	0.37	0.96	0.48	0.63	0.48	0.49	0.50	0.68
Internal Medicine	0.62	0.60	0.62	0.78	0.86	0.80	0.73	0.57	0.67
Surgery	0.55	0.56	1.05	0.55	0.70	0.62	0.67	0.80	0.82
Pediatrics	0.76	0.81	0.82	0.88	1.17	1.00	1.08	1.07	1.13
Obstetrics/Gynecology	0.88	0.92	0.92	1.03	1.76	1.17	1.41	1.40	1.48
Census Division									
New England	0.82	0.93	1.21	1.08	1.11	1.51	1.24	0.96	1.20
Middle Atlantic	0.76	0.74	1.67	1.02	1.04	1.17	1.02	1.12	1.13
East North Central	0.55	0.58	0.57	0.57	0.97	0.82	1.02	0.93	0.69
West North Central	0.74	0.76	0.85	0.88	1.06	0.87	0.91	1.06	1.22
South Atlantic	0.72	0.80	0.78	0.78	0.90	0.75	0.75	0.96	1.06
East South Central	0.90	0.97	0.83	0.78	0.76	0.76	1.12	1.19	1.22
West South Central	0.69	0.87	0.80	0.86	1.14	0.79	0.84	0.70	0.88
Mountain	0.79	0.88	1.06	1.44	1.43	1.11	1.60	1.12	1.25
Pacific	0.73	0.73	1.44	0.93	1.25	0.95	0.92	0.76	1.14
Type of Practice									
Solo	0.36	0.40	0.63	0.46	0.62	0.50	0.51	0.50	0.56
Non-solo	0.39	0.38	0.61	0.42	0.49	0.48	0.51	0.51	0.54
Location									
Nonmetropolitan	0.60	0.52	0.57	0.69	0.63	0.56	0.68	0.68	0.94
Metropolitan—									
Less than 1,000,000	0.35	0.38	0.38	0.42	0.53	0.47	0.42	0.46	0.53
1,000,000 and over	0.44	0.46	0.83	0.54	0.68	0.58	0.62	0.58	0.61
Physician Age									
Less than 36 years	0.92	0.95	1.10	0.88	1.06	0.91	0.82	1.05	1.05
36-45 years	0.61	0.57	0.55	0.55	0.65	0.61	0.71	0.59	0.62
46-55 years	0.44	0.51	0.58	0.64	0.81	0.66	0.64	0.66	0.82
56-65 years	0.50	0.52	1.54	0.68	1.00	0.78	0.80	0.96	0.97
66 or more years	0.69	0.78	0.69	1.03	1.05	1.33	1.10	1.03	1.11

Professional Expenses of Physicians

Professional expense information reported from the Socioeconomic Monitoring System refers to tax-deductible professional expenses from medical practice, not including contributions made for physicians into deferred compensation plans. Nonsolo practitioners are asked to report only their share of their practices' total expenses. The major components of total expenses are defined as follows: (1) office expenses, including rent or mortgage for office space, telephones, and utilities; (2) total nonphysician payroll expenses, including fringe benefits; (3) medical materials and supplies, such as drugs, X-ray films, and outside expenses for lab work and other services; (4) depreciation, lease, and rent for medical equipment; and (5) professional medical liability insurance premiums. Other expenses are not separately itemized in the surveys.

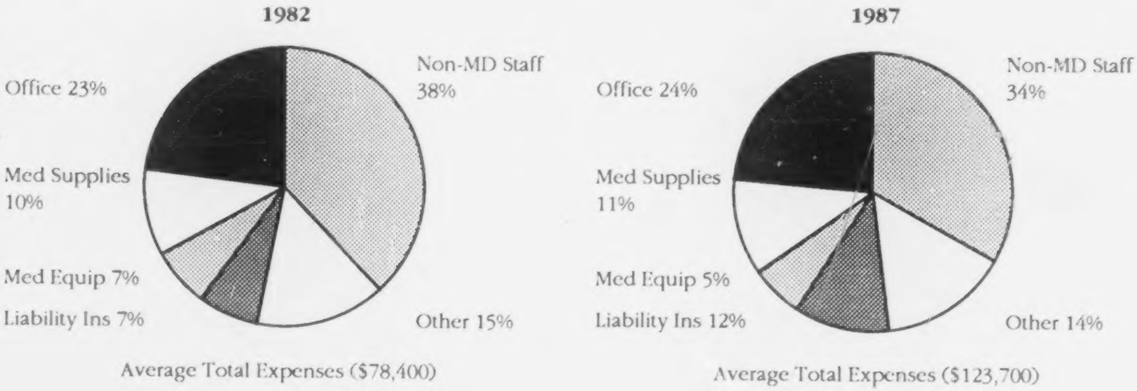
Figure 13 shows that total professional expenses have increased at a somewhat higher rate than inflation in every year since 1983. Since professional liability insurance premiums have increased at an even higher rate, their share of total professional expenses has grown from 7 percent in 1982 to 12 percent in 1987 (see Figure 14). Geographic patterns in average total professional expenses are indicated in Figure 15.

Figure 13. **Percent Change in Average Total Professional Expenses and Professional Liability Insurance Premiums of Self-Employed Physicians, 1982-1987**



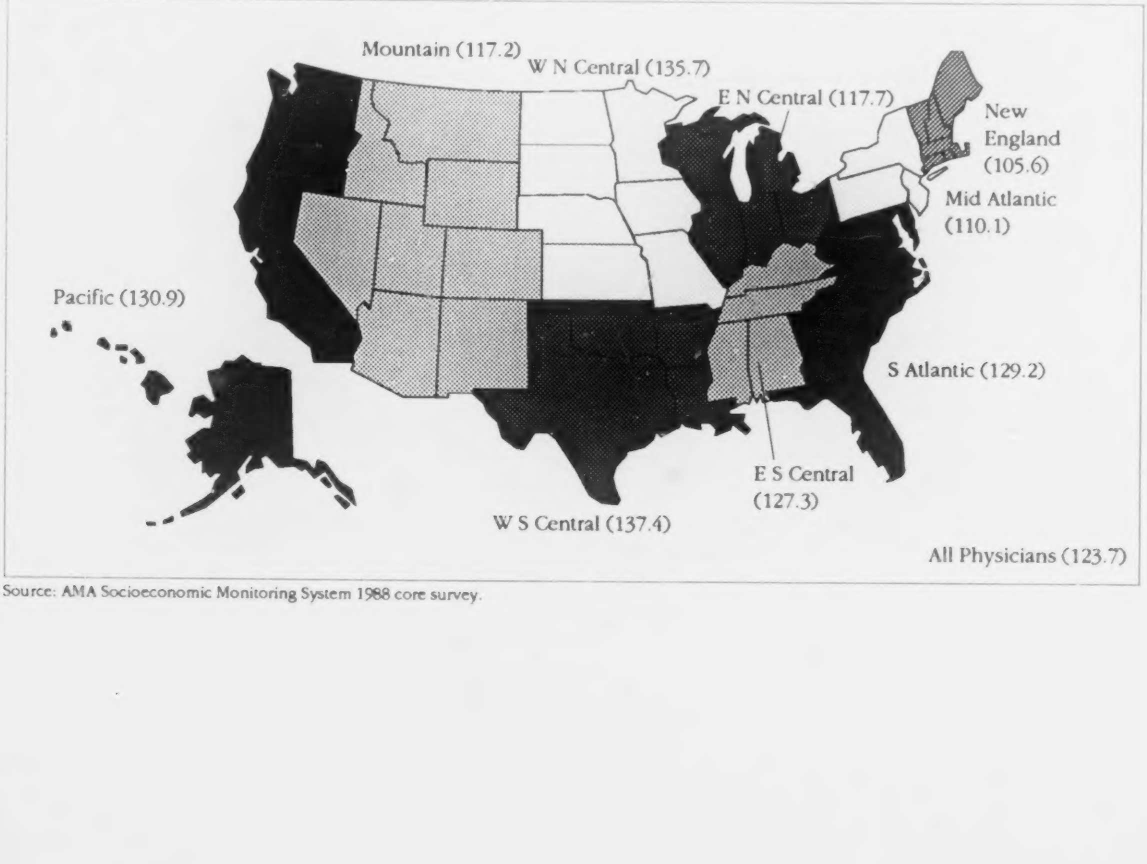
Source: AMA Socioeconomic Monitoring System 1983-1988 core surveys.

Figure 14. **Distribution of Average Professional Expenses of Self-Employed Physicians, 1982 and 1987**



Source: AMA Socioeconomic Monitoring System 1983 and 1988 core surveys.

Figure 15. **Average Professional Expenses (in thousands of dollars) of Self-Employed Physicians by Census Division, 1987**


Mountain (117.2)
W N Central (135.7)
E N Central (117.7)
New England (105.6)
Mid Atlantic (110.1)
Pacific (130.9)
S Atlantic (129.2)
E S Central (127.3)
W S Central (137.4)
All Physicians (123.7)

Source: AMA Socioeconomic Monitoring System 1988 core survey.

Table 33. **Mean Professional Expenses (in thousands of dollars) of Self-Employed Physicians, 1987**[a]

		Specialty				
	All Physicians[b]	General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	123.7	121.2	117.8	164.7	100.2	173.2
Census Division						
New England	105.6	.	130.4	156.2	.	.
Middle Atlantic	110.1	67.8	109.5	147.4	101.3	176.4
East North Central	117.7	119.9	115.5	175.5	101.4	188.9
West North Central	135.7	173.0	.	159.0	.	.
South Atlantic	129.2	114.0	102.2	171.1	108.0	189.9
East South Central	127.3	126.8	.	162.6	.	.
West South Central	137.4	126.2	155.0	163.7	.	186.6
Mountain	117.2	.	.	146.7	.	.
Pacific	130.9	126.3	132.4	180.3	90.1	162.7
Type of Practice						
Solo	110.4	102.7	106.3	142.7	96.5	163.3
Non-solo	142.3	152.8	133.9	199.9	104.3	188.8
Location						
Nonmetropolitan	116.0	127.1	100.2	131.1	.	.
Metropolitan— Less than 1,000,000	130.7	127.9	132.8	172.6	100.8	160.4
1,000,000 and over	118.5	107.6	107.4	162.4	97.3	186.1
Physician Age						
Less than 36 years	100.0	129.0	85.0	169.0	.	.
36-45 years	127.7	133.1	118.9	172.3	99.3	175.7
46-55 years	129.5	130.7	123.0	172.4	113.1	174.0
56-65 years	130.0	115.9	133.0	166.5	92.4	195.6
66 or more years	95.1	92.7	111.9	97.7	.	.

Source: 1988 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

b. Includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 33 (continued). **Standard Error of Mean Professional Expenses (in thousands of dollars) of Self-Employed Physicians, 1987**[a]

		Specialty				
	All Physicians[b]	General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	2.58	6.56	4.97	5.88	5.09	8.02
Census Division						
New England	11.75	.	36.20	21.43	.	.
Middle Atlantic	5.66	8.54	9.84	14.26	10.66	20.23
East North Central	5.84	11.88	10.28	16.51	13.33	27.24
West North Central	14.55	39.34	.	25.69	.	.
South Atlantic	5.79	9.99	7.74	15.38	13.25	19.18
East South Central	7.37	13.33	.	14.85	.	.
West South Central	7.72	14.39	21.84	17.70	.	19.69
Mountain	9.34	.	.	17.43	.	.
Pacific	7.64	14.54	13.91	13.88	11.29	17.50
Type of Practice						
Solo	2.82	6.05	5.49	6.03	7.19	8.24
Non-solo	4.58	13.42	8.92	11.15	7.23	15.47
Location						
Nonmetropolitan	5.56	8.81	20.72	13.25	.	.
Metropolitan—						
Less than 1,000,000	4.29	13.69	8.38	8.36	7.67	11.97
1,000,000 and over	3.61	7.55	6.16	9.60	7.71	12.02
Physician Age						
Less than 36 years	6.45	7.89	9.84	26.40	.	.
36-45 years	5.18	17.86	9.16	11.06	8.84	13.75
46-55 years	4.55	13.03	10.01	8.55	10.34	15.26
56-65 years	5.43	10.33	11.49	13.44	9.67	16.78
66 or more years	7.11	12.76	12.90	20.82	.	.

Table 34. **Mean Professional Expenses (in thousands of dollars) of Self-Employed Physicians, 1978-79, 1981-87**[a]

	1978	1979	1981	1982	1983	1984	1985	1986	1987
All Physicians	45.0	51.3	72.7	78.4	85.4	94.0	102.7	118.4	123.7
Specialty									
General/Family Practice	46.1	53.0	70.9	75.3	79.4	89.2	96.5	119.9	121.2
Internal Medicine	43.9	50.6	72.5	74.9	88.5	89.7	90.0	110.5	117.8
Surgery	61.2	67.4	89.2	103.7	112.3	128.9	135.7	148.6	164.7
Pediatrics	33.9	49.3	61.2	67.7	64.1	77.8	87.3	93.2	100.2
Obstetrics/Gynecology	61.4	66.9	98.9	108.3	108.5	121.6	131.9	149.5	173.2
Census Division									
New England	30.5	36.3	53.0	72.7	72.1	64.4	85.8	94.6	105.6
Middle Atlantic	38.9	41.2	64.7	59.8	71.6	83.6	82.6	105.4	110.1
East North Central	44.7	51.6	70.4	73.3	84.1	85.2	93.7	106.3	117.7
West North Central	44.2	51.1	78.2	87.1	86.0	100.2	102.7	132.6	135.7
South Atlantic	44.6	53.6	74.9	81.6	91.1	101.2	109.0	130.8	129.2
East South Central	51.4	63.3	91.0	82.6	88.8	102.4	106.6	133.0	127.3
West South Central	50.0	58.6	83.7	99.2	105.4	118.8	124.7	138.9	137.4
Mountain	46.1	52.4	63.0	77.2	71.5	85.3	112.2	104.6	117.2
Pacific	51.8	57.3	77.6	77.6	89.1	98.2	109.5	117.6	130.9
Type of Practice									
Solo	46.8	49.3	70.4	72.4	77.2	85.4	90.5	100.7	110.4
Non-solo	42.8	53.8	77.7	86.3	98.8	108.0	120.8	144.4	142.3
Location									
Nonmetropolitan	49.8	58.8	66.2	79.6	85.5	85.0	91.4	119.7	116.0
Metropolitan—									
Less than 1,000,000	47.9	51.7	79.3	77.9	91.5	98.0	106.2	123.3	130.7
1,000,000 and over	41.6	49.7	68.5	78.5	79.4	92.5	102.3	112.9	118.5
Physician Age									
Less than 36 years	30.2	37.0	52.6	57.2	67.2	90.4	80.4	90.9	100.0
36-45 years	48.3	54.6	79.0	76.7	89.5	96.8	101.7	123.7	127.7
46-55 years	54.1	61.1	86.9	96.0	99.2	105.0	114.1	127.9	129.5
56-65 years	45.3	51.7	66.9	79.6	80.4	86.0	107.0	119.8	130.0
66 or more years	29.3	36.9	69.0	58.2	61.5	69.1	89.4	93.4	95.1

Source: 1982-88, AMA Socioeconomic Monitoring System core surveys. 1979-80, AMA Periodic Surveys of Physicians. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

[a] Data, other than in the specialty breakdown, are based on responses from physicians in all specialties. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 34 (continued). **Standard Error of the Mean Professional Expenses (in thousands of dollars) of Self-Employed Physicians, 1978-79, 1981-87**[a]

	1978	1979	1981	1982	1983	1984	1985	1986	1987
All Physicians	0.85	0.99	2.32	1.78	1.68	2.14	2.48	2.60	2.58
Specialty									
General/Family Practice	1.60	1.96	4.10	2.80	3.24	4.04	4.83	7.01	6.56
Internal Medicine	1.62	2.14	5.47	3.80	4.88	5.19	4.35	4.96	4.97
Surgery	2.37	2.27	5.14	4.98	3.72	6.17	5.80	5.16	5.88
Pediatrics	2.13	3.23	9.13	4.85	3.00	3.91	5.43	6.29	5.09
Obstetrics/Gynecology	3.24	4.44	11.87	6.00	4.94	6.08	6.45	8.08	8.02
Census Division									
New England	2.05	2.55	6.42	7.60	5.53	5.56	13.62	9.30	11.75
Middle Atlantic	1.71	2.06	4.61	4.01	3.88	6.01	4.86	5.73	5.66
East North Central	2.30	2.37	5.66	3.64	4.39	3.67	5.24	6.13	5.84
West North Central	3.09	2.80	5.89	7.90	6.09	7.75	12.14	11.20	14.55
South Atlantic	1.92	2.44	6.99	4.72	4.19	5.86	6.71	6.50	5.79
East South Central	4.49	5.88	16.37	7.08	5.06	7.11	7.78	9.69	7.37
West South Central	3.13	3.46	6.46	5.51	6.75	6.73	9.12	9.76	7.72
Mountain	2.81	3.55	6.73	5.70	5.14	7.68	9.62	8.44	9.34
Pacific	2.37	2.79	5.24	4.63	4.14	5.61	5.36	6.53	7.64
Type of Practice									
Solo	1.10	1.02	2.72	1.93	1.95	2.35	2.55	2.57	2.82
Non-solo	1.34	1.81	4.34	3.21	3.00	4.01	4.71	4.99	4.58
Location									
Nonmetropolitan	2.41	3.88	4.47	4.64	4.83	3.74	4.69	6.21	5.56
Metropolitan—									
Less than 1,000,000	1.35	1.44	4.29	2.50	2.53	3.48	3.86	4.01	4.29
1,000,000 and over	1.22	1.43	2.96	2.94	2.54	3.20	3.88	3.99	3.61
Physician Age									
Less than 36 years	2.15	2.00	3.63	3.32	3.82	7.87	4.85	4.74	6.45
36-45 years	1.77	2.16	4.35	3.11	3.22	3.24	4.02	4.62	5.18
46-55 years	1.85	2.18	5.84	4.25	3.51	5.32	5.20	5.72	4.55
56-65 years	1.55	1.81	3.90	3.72	3.34	3.63	5.87	5.44	5.43
66 or more years	1.52	1.96	8.69	3.39	4.19	4.11	10.00	8.04	7.11

Table 35. **Median Professional Expenses (in thousands of dollars) of Self-Employed Physicians, 1987**[a]

		Specialty				
	All Physicians[b]	General & Family Practice	Internal Medicine	Surgery	Pediatrics	Obstetrics/ Gynecology
All Physicians	99	96	100	133	89	149
Census Division						
New England	81	.	85	126	.	.
Middle Atlantic	80	58	99	112	87	154
East North Central	96	101	107	125	95	143
West North Central	103	108	.	129	.	.
South Atlantic	103	96	96	139	100	161
East South Central	116	133	.	150	.	.
West South Central	108	108	108	130	.	180
Mountain	97	.	.	112	.	.
Pacific	102	107	109	163	90	149
Type of Practice						
Solo	90	81	95	120	84	136
Non-solo	113	128	113	156	95	170
Location						
Nonmetropolitan	96	119	70	107	.	.
Metropolitan—						
Less than 1,000,000	102	92	103	142	89	142
1,000,000 and over	96	92	100	125	88	163
Physician Age						
Less than 36 years	82	118	70	130	.	.
36-45 years	100	107	105	136	89	142
46-55 years	107	117	104	150	103	150
56-65 years	101	96	100	130	84	244
66 or more years	69	60	104	69	.	.

Source: 1988 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

b. Includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 36. **Median Professional Expenses (in thousands of dollars) of Self-Employed Physicians, 1978-79, 1981-87**[a]

	1978	1979	1981	1982	1983	1984	1985	1986	1987
All Physicians	35	40	50	61	67	75	78	89	99
Specialty									
General/Family Practice	38	41	56	63	68	75	81	92	96
Internal Medicine	39	40	60	66	67	73	74	91	100
Surgery	46	50	68	74	97	104	105	116	133
Pediatrics	30	40	45	55	61	69	73	76	89
Obstetrics/Gynecology	50	60	72	96	99	106	116	124	149
Census Division									
New England	25	30	40	52	55	50	57	66	81
Middle Atlantic	30	30	50	49	53	68	61	81	80
East North Central	35	40	50	60	64	72	71	75	96
West North Central	34	45	80	65	68	80	82	102	103
South Atlantic	35	40	50	60	71	77	79	100	103
East South Central	40	42	60	68	82	88	85	104	116
West South Central	40	45	63	80	78	94	91	97	108
Mountain	40	43	50	63	62	66	84	82	97
Pacific	40	40	60	63	71	74	90	92	102
Type of Practice									
Solo	37	40	50	60	60	69	71	80	90
Non-solo	30	39	60	64	80	84	90	106	113
Location									
Nonmetropolitan	40	42	55	64	70	77	80	95	96
Metropolitan—									
Less than 1,000,000	39	40	56	63	72	77	80	93	102
1,000,000 and over	30	36	50	59	60	69	73	82	96
Physician Age									
Less than 36 years	22	30	40	49	58	70	65	79	82
36-45 years	40	40	55	63	71	78	79	93	100
46-55 years	40	45	62	70	83	84	91	96	107
56-65 years	38	40	50	62	60	71	79	89	101
66 or more years	21	29	45	50	46	55	57	67	69

Source: 1982-88, AMA Socioeconomic Monitoring System core surveys. 1979-80, AMA Periodic Surveys of Physicians. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

[a] Data, other than in the specialty breakdown, are based on responses from physicians in all specialties. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 37. **Mean Non-Physician Payroll (in thousands of dollars) per Self-Employed Physician, 1982-87**[a]

	1982	1983	1984	1985	1986	1987
All Physicians	30.1	29.0	31.2	35.6	38.8	42.5
Specialty						
General/Family Practice	30.4	29.9	31.2	37.3	42.5	42.6
Internal Medicine	29.4	31.2	32.3	30.8	35.3	43.7
Surgery	38.3	37.9	42.0	43.0	48.1	58.3
Pediatrics	25.1	25.3	29.5	33.1	35.3	33.7
Obstetrics/Gynecology	45.8	33.3	36.8	42.8	45.7	48.1
Census Division						
New England	30.5	24.3	21.3	25.3	28.7	36.6
Middle Atlantic	19.8	23.3	26.6	26.4	34.2	35.5
East North Central	28.2	28.2	28.6	31.1	33.3	40.0
West North Central	37.6	30.2	37.6	37.7	49.3	51.2
South Atlantic	31.7	31.8	34.8	41.4	40.5	46.6
East South Central	35.4	33.6	38.6	50.3	49.6	47.1
West South Central	38.3	38.7	36.4	46.0	50.2	44.0
Mountain	28.0	23.7	25.2	33.3	28.3	37.1
Pacific	28.2	27.5	32.3	34.5	39.1	45.9
Type of Practice						
Solo	26.0	24.2	25.9	29.2	31.8	35.9
Non-solo	35.7	36.7	40.1	45.6	50.0	52.9
Location						
Nonmetropolitan	34.7	31.3	29.7	33.7	43.0	43.2
Metropolitan—						
Less than 1,000,000	29.9	32.6	33.1	37.8	41.6	46.5
1,000,000 and over	28.9	25.0	29.8	33.8	34.8	38.5
Physician Age						
Less than 36 years	19.3	23.7	29.8	24.5	30.5	33.3
36-45 years	30.6	29.5	31.2	35.0	40.0	44.1
46-55 years	34.9	33.4	35.6	40.6	42.1	45.0
56-65 years	31.3	28.2	29.1	37.9	41.0	44.8
66 or more years	27.0	22.3	22.9	31.2	26.3	31.2

Source: 1983-88, AMA Socioeconomic Monitoring System core surveys. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

[a] Data, other than in the specialty breakdown, are based on responses from physicians in all specialties. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 37 (continued). **Standard Error of the Mean Nonphysician Personnel Payroll (in thousands of dollars) per Self-Employed Physician, 1982-87**[a]

	1982	1983	1984	1985	1986	1987
All Physicians	0.84	0.70	0.85	1.20	1.18	1.14
Specialty						
General/Family Practice	1.44	1.47	1.46	2.13	2.64	2.68
Internal Medicine	1.81	2.06	2.27	1.99	1.86	2.16
Surgery	2.35	1.55	2.53	2.19	2.32	2.81
Pediatrics	2.15	1.59	1.68	2.33	3.16	2.27
Obstetrics/Gynecology	3.44	1.88	2.17	3.36	6.30	2.94
Census Division						
New England	4.16	2.69	2.37	3.46	2.93	4.42
Middle Atlantic	1.37	1.74	2.55	1.98	3.82	2.48
East North Central	1.62	1.76	1.54	2.04	2.61	2.55
West North Central	3.74	2.69	3.94	4.45	4.80	5.49
South Atlantic	2.21	1.78	2.26	3.56	2.40	2.89
East South Central	3.47	2.45	3.17	5.21	4.29	3.34
West South Central	2.55	2.67	2.26	5.97	4.46	2.93
Mountain	3.01	2.28	2.16	3.05	2.67	3.65
Pacific	2.34	1.53	2.21	2.10	2.94	3.63
Type of Practice						
Solo	0.84	0.73	0.82	0.92	1.07	1.17
Non-solo	1.60	1.35	1.76	2.63	2.47	2.14
Location						
Nonmetropolitan	2.71	2.14	1.42	1.96	2.91	2.76
Metropolitan—						
Less than 1,000,000	1.01	1.11	1.36	1.74	1.92	1.93
1,000,000 and over	1.47	0.97	1.32	2.01	1.69	1.52
Physician Age						
Less than 36 years	1.31	1.78	3.04	1.47	2.46	2.46
36-45 years	1.68	1.29	1.38	1.90	2.07	2.18
46-55 years	1.88	1.40	2.11	2.83	2.98	2.27
56-65 years	1.55	1.49	1.36	3.09	2.22	2.43
66 or more years	2.31	2.24	1.59	2.90	2.15	2.67

Table 38. **Mean Office Expenses (in thousands of dollars) per Self-Employed Physician, 1982-87**[a]

	1982	1983	1984	1985	1986	1987
All Physicians	17.8	21.2	24.4	26.4	28.5	30.0
Specialty						
General/Family Practice	18.2	20.5	23.1	25.0	29.2	30.0
Internal Medicine	18.6	24.2	22.6	25.9	28.0	28.7
Surgery	22.2	26.2	33.0	32.1	38.0	38.2
Pediatrics	17.5	20.8	23.7	23.1	20.8	31.1
Obstetrics/Gynecology	24.9	25.3	31.1	36.6	37.8	42.7
Census Division						
New England	14.5	18.4	16.9	27.4	20.1	23.9
Middle Atlantic	16.5	20.6	22.1	20.9	28.8	27.0
East North Central	14.5	20.0	19.8	25.8	21.6	27.4
West North Central	18.1	20.6	30.9	26.3	30.8	27.6
South Atlantic	18.6	22.7	26.4	24.5	30.4	30.0
East South Central	17.2	23.0	23.9	26.1	30.5	32.8
West South Central	23.2	22.7	31.7	32.1	37.2	32.6
Mountain	15.6	17.2	20.7	27.2	23.7	28.1
Pacific	19.4	22.1	26.7	30.1	30.2	36.9
Type of Practice						
Solo	17.4	20.3	23.4	25.0	26.7	28.3
Non-solo	18.3	22.6	26.1	28.7	31.3	32.4
Location						
Nonmetropolitan	16.4	21.7	19.9	21.6	28.1	26.2
Metropolitan—						
Less than 1,000,000	17.7	21.1	25.4	26.9	26.4	29.8
1,000,000 and over	18.3	21.1	24.7	27.2	30.8	31.0
Physician Age						
Less than 36 years	13.8	18.2	24.9	24.1	26.1	28.6
36-45 years	17.5	23.1	25.7	26.3	29.1	30.4
46-55 years	20.9	22.9	25.4	29.4	30.1	30.6
56-65 years	18.5	18.8	22.2	23.7	29.3	31.6
66 or more years	13.2	16.6	19.9	26.5	20.3	23.3

Source: 1983-88, AMA Socioeconomic Monitoring System core surveys. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. Data, other than in the specialty breakdown, are based on responses from physicians in all specialties. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 38 (continued). **Standard Error of the Mean Office Expenses (in thousands of dollars) per Self-Employed Physician, 1982-87[a]**

	1982	1983	1984	1985	1986	1987
All Physicians	0.49	0.51	0.77	0.81	0.84	0.87
Specialty						
General/Family Practice	1.07	1.13	1.44	1.83	2.17	1.87
Internal Medicine	1.15	1.51	1.38	1.62	1.78	1.62
Surgery	1.16	1.12	2.29	1.72	2.08	2.28
Pediatrics	1.74	1.50	2.07	1.93	1.59	2.68
Obstetrics/Gynecology	2.69	1.65	2.82	3.03	3.07	3.35
Census Division						
New England	1.56	1.78	1.81	6.03	2.11	3.31
Middle Atlantic	1.39	1.33	1.89	1.59	2.27	2.02
East North Central	0.88	1.23	1.23	2.08	1.48	2.01
West North Central	1.83	1.83	4.51	3.72	3.50	5.59
South Atlantic	1.27	1.25	1.93	1.50	2.26	1.66
East South Central	1.83	2.32	2.49	2.64	3.75	3.45
West South Central	1.75	1.56	3.62	2.43	3.25	2.05
Mountain	1.41	1.70	1.98	3.69	2.13	2.59
Pacific	1.38	1.30	1.74	1.99	1.88	2.75
Type of Practice						
Solo	0.59	0.60	0.91	0.97	0.93	0.99
Non-solo	0.83	0.90	1.36	1.41	1.57	1.55
Location						
Nonmetropolitan	1.25	1.61	1.46	1.75	2.52	1.94
Metropolitan—						
Less than 1,000,000	0.74	0.75	1.22	1.35	1.02	1.19
1,000,000 and over	0.76	0.75	1.17	1.16	1.46	1.48
Physician Age						
Less than 36 years	0.96	1.38	2.62	2.21	2.73	3.81
36-45 years	0.91	1.05	1.40	1.28	1.45	1.51
46-55 years	1.02	0.95	1.68	1.67	1.88	1.47
56-65 years	1.12	0.89	1.25	1.37	1.66	1.88
66 or more years	1.29	1.41	1.74	4.34	1.49	2.19

Table 39. **Mean Expenditures (in thousands of dollars) on Medical Supplies per Self-Employed Physician, 1982-87**[a]

	1982	1983	1984	1985	1986	1987
All Physicians	7.6	9.3	10.7	11.2	13.2	13.5
Specialty						
General/Family Practice	10.8	11.6	13.7	14.8	17.6	17.2
Internal Medicine	7.5	10.9	11.0	11.5	14.9	16.8
Surgery	8.8	11.4	13.7	13.8	13.4	13.8
Pediatrics	7.4	7.2	9.6	12.6	14.8	16.6
Obstetrics/Gynecology	9.6	11.1	13.3	12.2	14.1	17.4
Census Division						
New England	5.0	6.4	4.7	10.1	10.3	9.5
Middle Atlantic	4.7	8.4	8.1	7.3	10.0	12.2
East North Central	7.0	8.0	10.4	10.1	11.0	13.6
West North Central	9.5	10.2	9.1	14.2	17.3	17.6
South Atlantic	7.8	8.9	12.4	12.1	14.6	13.1
East South Central	8.5	11.9	14.6	12.2	17.7	13.5
West South Central	11.3	13.2	15.6	15.3	18.4	15.7
Mountain	7.9	7.8	10.3	13.9	14.3	12.3
Pacific	7.7	9.5	10.6	10.7	10.8	13.8
Type of Practice						
Solo	7.1	8.6	10.3	9.9	11.0	12.5
Non-solo	8.3	10.3	11.5	13.4	16.9	15.0
Location						
Nonmetropolitan	9.2	9.2	11.9	13.5	15.5	17.1
Metropolitan—						
Less than 1,000,000	7.5	10.2	11.9	11.3	14.7	13.5
1,000,000 and over	7.3	8.4	9.5	10.6	11.1	12.6
Physician Age						
Less than 36 years	6.2	7.0	10.0	10.3	11.9	11.8
36-45 years	7.3	8.9	11.1	11.1	12.7	14.7
46-55 years	9.0	10.8	11.4	11.5	16.8	12.8
56-65 years	7.7	9.5	9.9	12.3	12.1	13.8
66 or more years	6.6	8.6	10.2	9.9	8.9	11.2

Source: 1983-88, AMA Socioeconomic Monitoring System core surveys. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. Data, other than in the specialty breakdown, are based on responses from physicians in all specialties. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 39 (continued). **Standard Error of the Mean Expenditures (in thousands of dollars) on Medical Supplies per Self-Employed Physician, 1982-87**[a]

	1982	1983	1984	1985	1986	1987
All Physicians	0.29	0.29	0.42	0.48	0.66	0.54
Specialty						
General/Family Practice	0.58	0.61	1.10	1.18	1.49	1.53
Internal Medicine	0.65	0.87	0.93	1.19	2.01	1.38
Surgery	0.68	0.73	1.06	1.15	1.44	1.09
Pediatrics	0.76	0.56	0.77	1.31	1.30	1.68
Obstetrics/Gynecology	1.16	0.88	1.10	1.18	1.64	1.88
Census Division						
New England	0.63	0.80	0.69	3.06	3.34	2.01
Middle Atlantic	0.59	0.78	0.79	0.80	0.94	1.12
East North Central	0.64	0.74	0.94	1.00	1.13	1.47
West North Central	1.31	0.97	1.26	3.49	2.80	3.24
South Atlantic	0.64	0.62	1.03	1.03	1.50	1.01
East South Central	1.10	1.20	2.22	1.10	2.92	1.40
West South Central	1.10	1.18	1.62	1.60	2.82	1.56
Mountain	1.19	0.81	1.49	1.91	4.32	2.58
Pacific	0.82	0.76	1.26	1.14	1.02	1.57
Type of Practice						
Solo	0.37	0.36	0.51	0.50	0.69	0.63
Non-solo	0.46	0.49	0.73	0.93	1.29	0.96
Location						
Nonmetropolitan	0.84	0.65	1.19	1.31	1.44	1.84
Metropolitan—						
Less than 1,000,000	0.42	0.47	0.73	0.67	1.24	0.84
1,000,000 and over	0.46	0.44	0.54	0.77	0.68	0.75
Physician Age						
Less than 36 years	0.60	0.68	1.10	1.20	1.48	1.21
36-45 years	0.50	0.50	0.73	0.70	0.88	1.06
46-55 years	0.69	0.62	0.79	0.92	2.06	0.99
56-65 years	0.62	0.64	1.00	1.34	1.00	1.21
66 or more years	0.68	1.03	1.49	1.83	1.08	1.51

Table 40. **Mean Professional Liability Premiums (in thousands of dollars) per Self-Employed Physician, 1982-87[a]**

	1982	1983	1984	1985	1986	1987
All Physicians	5.8	6.9	8.4	10.5	12.8	15.0
Specialty						
General/Family Practice	3.5	4.2	4.6	6.8	7.3	8.9
Internal Medicine	3.7	4.5	4.9	5.8	7.1	8.4
Surgery	9.9	11.0	13.3	16.6	21.3	24.5
Pediatrics	2.9	3.9	3.4	4.7	6.3	7.1
Obstetrics/Gynecology	10.8	14.0	19.0	23.5	29.3	35.3
Census Division						
New England	5.5	6.6	7.1	9.8	10.7	17.9
Middle Atlantic	7.4	8.9	10.4	12.9	14.9	17.0
East North Central	5.3	6.9	7.6	10.7	13.4	13.9
West North Central	5.2	4.8	8.0	10.1	13.6	15.4
South Atlantic	5.6	6.1	8.6	11.3	14.4	15.5
East South Central	4.5	5.7	6.3	9.7	10.1	12.6
West South Central	4.2	5.2	5.5	7.0	8.1	11.9
Mountain	5.5	6.2	7.5	8.1	12.0	16.1
Pacific	6.8	8.6	9.9	11.1	12.8	14.4
Type of Practice						
Solo	5.6	6.5	7.9	9.5	11.9	14.0
Non-solo	6.0	7.5	9.2	11.8	14.0	16.2
Location						
Nonmetropolitan	4.4	5.1	7.1	7.6	10.9	14.2
Metropolitan—						
Less than 1,000,000	5.9	6.5	7.8	10.1	12.3	14.1
1,000,000 and over	6.1	7.8	9.2	11.6	13.8	16.0
Physician Age						
Less than 36 years	4.6	5.2	6.2	8.7	9.5	12.0
36-45 years	6.1	7.0	8.5	10.4	13.0	14.8
46-55 years	6.4	7.7	9.4	11.6	14.8	16.1
56-65 years	5.6	7.0	8.7	10.8	12.4	16.6
66 or more years	4.5	5.9	6.5	8.5	10.3	10.7

Source: 1983-88, AMA Socioeconomic Monitoring System core surveys. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. Data, other than in the specialty breakdown, are based on responses from physicians in all specialties. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 40 (continued). **Standard Error of the Mean Professional Liability Premiums (in thousands of dollars) per Self-Employed Physician, 1982-87**[a]

	1982	1983	1984	1985	1986	1987
All Physicians	0.14	0.16	0.20	0.23	0.29	0.39
Specialty						
General/Family Practice	0.18	0.28	0.28	0.43	0.37	0.95
Internal Medicine	0.29	0.35	0.30	0.38	0.49	0.44
Surgery	0.35	0.34	0.49	0.49	0.67	0.96
Pediatrics	0.32	0.61	0.16	0.31	0.39	0.41
Obstetrics/Gynecology	0.55	0.68	0.94	1.05	1.21	1.50
Census Division						
New England	0.55	0.83	0.73	1.14	1.31	3.30
Middle Atlantic	0.44	0.50	0.60	0.66	0.81	1.03
East North Central	0.29	0.44	0.42	0.53	0.69	0.77
West North Central	0.47	0.34	0.71	0.82	0.91	1.06
South Atlantic	0.35	0.32	0.46	0.66	0.85	0.83
East South Central	0.38	0.51	0.91	0.94	0.81	0.99
West South Central	0.29	0.33	0.39	0.43	0.61	1.54
Mountain	0.47	0.52	0.64	0.65	0.95	1.38
Pacific	0.39	0.48	0.52	0.56	0.69	0.80
Type of Practice						
Solo	0.18	0.22	0.24	0.28	0.38	0.52
Non-solo	0.21	0.25	0.33	0.39	0.45	0.60
Location						
Nonmetropolitan	0.28	0.38	0.51	0.39	0.64	1.47
Metropolitan—						
Less than 1,000,000	0.20	0.21	0.29	0.34	0.43	0.56
1,000,000 and over	0.22	0.28	0.31	0.38	0.47	0.58
Physician Age						
Less than 36 years	0.37	0.38	0.47	0.58	0.56	0.74
36-45 years	0.24	0.29	0.34	0.39	0.53	0.59
46-55 years	0.30	0.33	0.44	0.49	0.63	0.69
56-65 years	0.26	0.36	0.42	0.54	0.56	1.23
66 or more years	0.35	0.63	0.54	0.70	0.93	0.84

Table 41. **Mean Expenditures (in thousands of dollars) on Medical Equipment per Self-Employed Physician, 1982-87**[a]

	1982	1983	1984	1985	1986	1987
All Physicians	5.1	5.1	5.5	5.9	7.0	6.5
Specialty						
General/Family Practice	4.3	4.3	4.8	4.8	6.9	7.2
Internal Medicine	5.8	4.9	4.8	7.0	5.8	5.1
Surgery	7.3	7.3	8.3	8.4	8.5	9.2
Pediatrics	2.4	4.4	3.3	3.9	4.7	4.1
Obstetrics/Gynecology	7.5	6.6	7.9	7.1	7.2	8.5
Census Division						
New England	4.1	5.1	2.7	4.9	3.2	5.0
Middle Atlantic	3.4	3.8	5.4	4.5	4.8	5.8
East North Central	4.2	4.9	3.9	5.4	4.9	5.0
West North Central	4.9	4.2	5.2	5.1	10.7	5.4
South Atlantic	4.6	5.9	6.0	5.6	8.9	7.5
East South Central	5.4	4.7	5.3	6.0	8.4	6.3
West South Central	7.9	7.2	9.0	6.9	8.0	6.7
Mountain	7.1	4.0	6.7	11.8	7.2	5.7
Pacific	5.1	5.1	5.4	5.6	7.9	8.5
Type of Practice						
Solo	4.8	4.8	5.0	5.6	5.5	6.0
Non-solo	5.4	5.5	6.5	6.4	9.4	7.1
Location						
Nonmetropolitan	4.9	4.7	4.5	6.3	7.1	6.5
Metropolitan—						
Less than 1,000,000	5.0	5.3	6.4	6.3	7.8	7.6
1,000,000 and over	5.2	5.0	5.0	5.4	6.1	5.4
Physician Age						
Less than 36 years	4.1	4.9	8.9	6.4	6.2	5.0
36-45 years	6.0	5.3	6.2	6.8	8.2	6.9
46-55 years	5.3	5.8	5.5	5.5	7.3	7.5
56-65 years	4.5	4.7	3.5	5.3	6.0	5.9
66 or more years	2.7	2.5	3.1	4.4	3.4	4.0

Source: 1983-88, AMA Socioeconomic Monitoring System core surveys. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

[a] Data, other than in the specialty breakdown, are based on responses from physicians in all specialties. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 41 (continued). **Standard Error of the Mean Expenditures (in thousands of dollars) on Medical Equipment per Self-Employed Physician, 1982-87**[a]

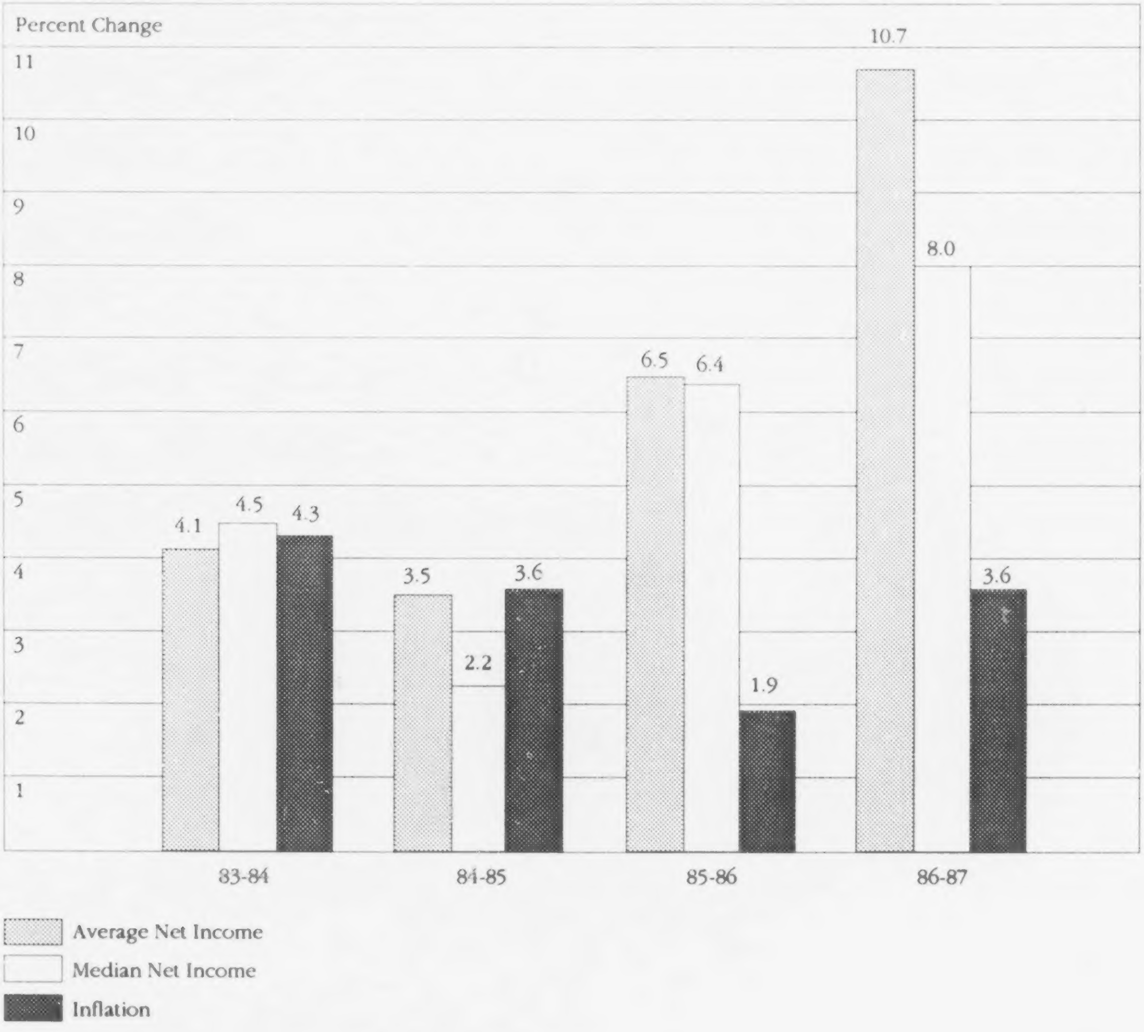
	1982	1983	1984	1985	1986	1987
All Physicians	0.27	0.22	0.34	0.43	0.42	0.41
Specialty						
General/Family Practice	0.33	0.47	0.51	0.38	0.80	1.69
Internal Medicine	1.08	0.47	0.58	2.30	0.59	0.47
Surgery	0.68	0.60	0.92	0.79	0.67	0.77
Pediatrics	0.34	0.70	0.37	0.41	0.56	0.49
Obstetrics/Gynecology	1.32	0.71	1.41	0.89	1.18	1.09
Census Division						
New England	0.71	1.51	0.52	2.02	0.48	1.09
Middle Atlantic	0.44	0.36	1.00	0.65	0.50	0.77
East North Central	0.42	0.51	0.38	0.64	0.65	0.53
West North Central	0.75	0.61	0.90	0.75	2.45	0.96
South Atlantic	0.68	0.60	0.80	0.51	1.34	0.85
East South Central	0.66	0.63	0.56	0.75	1.93	0.77
West South Central	1.40	1.03	0.97	0.87	1.04	0.79
Mountain	1.37	0.54	2.96	5.31	1.30	0.95
Pacific	0.68	0.46	0.74	0.54	1.33	2.14
Type of Practice						
Solo	0.32	0.28	0.33	0.64	0.35	0.58
Non-solo	0.47	0.37	0.72	0.51	0.90	0.55
Location						
Nonmetropolitan	0.50	0.38	0.45	0.73	0.84	0.67
Metropolitan—						
Less than 1,000,000	0.33	0.31	0.69	0.53	0.71	0.81
1,000,000 and over	0.52	0.39	0.38	0.81	0.56	0.40
Physician Age						
Less than 36 years	0.53	0.52	1.95	0.78	0.71	0.67
36-45 years	0.59	0.34	0.48	1.00	0.85	0.62
46-55 years	0.45	0.51	0.70	0.68	0.79	1.10
56-65 years	0.64	0.56	0.35	0.53	0.79	0.79
66 or more years	0.29	0.37	0.64	1.50	1.05	0.61

Physician Net Income after Expenses before Taxes

Physician net income is defined to include all earnings from medical practice after expenses before taxes, including fringe benefits and contributions into deferred compensation plans. A special effort is made in the Socioeconomic Monitoring System surveys to ensure that deferred compensation is included in the net income that is reported.

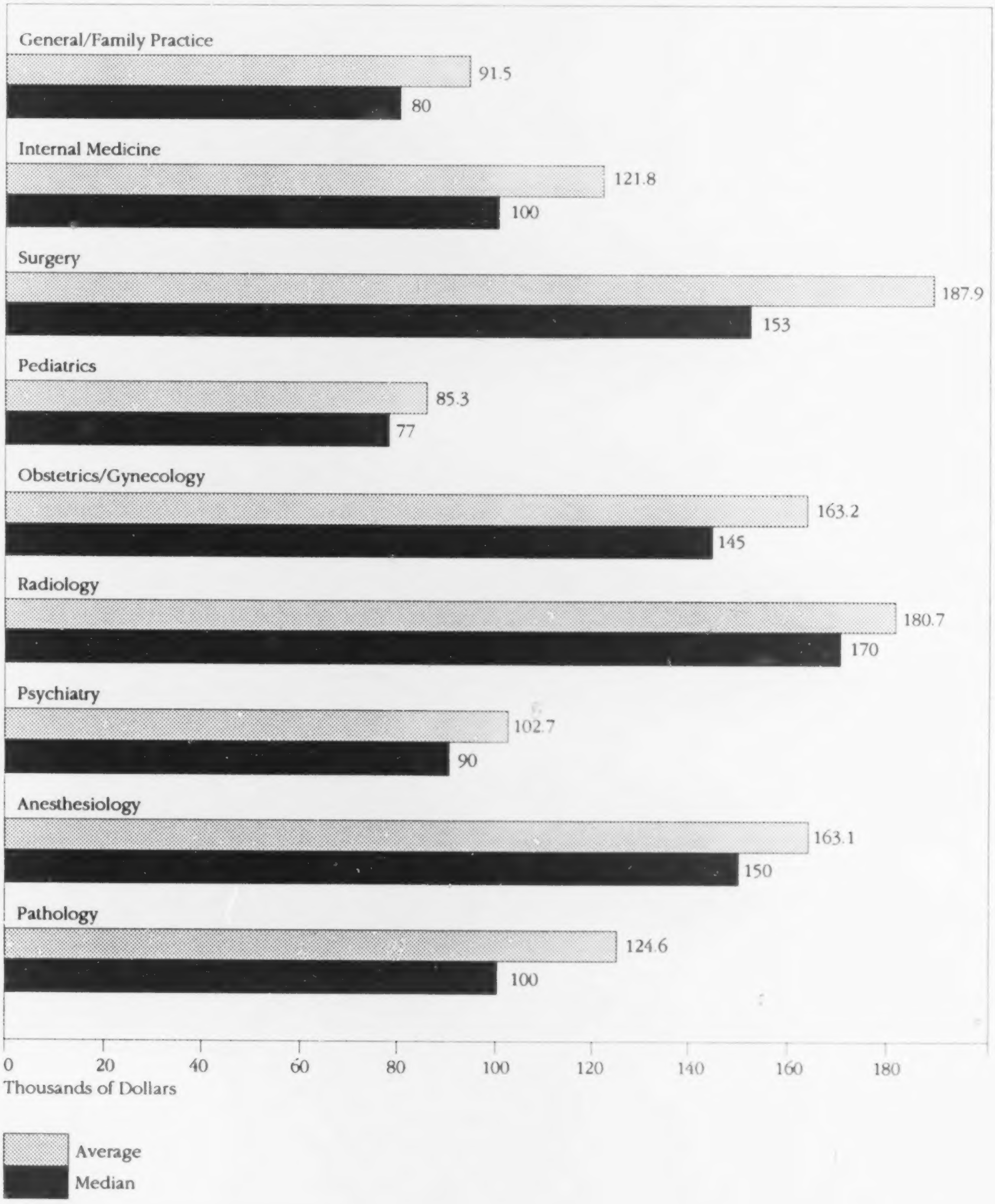
Both physician average and median net income increased at a faster rate than inflation in 1987 (see Figure 16). Although average net income reached $132,300, half of physicians earned less than $108,000. As shown in Figure 17, earnings vary by specialty. The highest earnings were among radiologists; the lowest were among general/family practitioners and pediatricians.

Figure 16. **Percent Change in Average and Median Net Income after Expenses before Taxes of All Physicians, 1983-1987**



Source: AMA Socioeconomic Monitoring System 1984-1988 core surveys.

Figure 17. **Average and Median Physician Net Income (in thousands of dollars) after Expenses before Taxes by Specialty, 1987**



Source: AMA Socioeconomic Monitoring System 1988 core survey.

Table 42. **Mean Physician Net Income (in thousands of dollars) after Expenses before Taxes, 1987**[a]

		Specialty								
	All Physicians[b]	GP/FP	Int Med	Surg	Ped	Ob/Gyn	Rad	Psych	Anes	Path
All Physicians	132.3	91.5	121.8	187.9	85.3	163.2	180.7	102.7	163.1	124.6
Census Division										
New England	110.6	78.1	106.2	156.6	.	.	.	93.3	.	.
Middle Atlantic	126.1	82.5	126.5	161.8	89.5	177.6	.	101.4	144.8	.
East North Central	137.6	87.5	110.8	216.2	81.1	240.8	174.4	120.6	173.0	.
West North Central	133.9	93.2	157.8	191.4	.	.	.	.	.	.
South Atlantic	133.8	91.4	131.2	169.6	89.6	162.4	188.8	105.0	164.5	.
East South Central	141.2	92.5	134.5	195.0	.	.	.	.	.	.
West South Central	140.4	87.3	126.6	207.3	78.8	132.3	204.6	111.7		.
Mountain	125.5	87.3	.	171.8	.	.		.	.	.
Pacific	135.4	113.0	106.8	210.5	106.7	157.7	181.6	90.3	157.0	.
Type of Practice										
Solo	127.8	95.2	111.9	165.3	83.3	174.6	137.4	105.3	167.1	.
Non-solo	135.0	88.5	127.9	208.7	86.1	152.2	185.8	99.7	162.0	129.7
Location										
Nonmetropolitan	117.9	90.5	122.1	156.9	.	.	197.1	.	.	.
Metropolitan—										
Less than 1,000,000	140.4	85.9	130.2	203.2	88.1	176.8	208.9	96.3	176.9	128.9
1,000,000 and over	127.9	99.1	115.5	176.7	84.6	149.7	152.3	107.5	154.3	113.3
Employment Status										
Self-employed	146.2	96.9	132.4	196.3	96.5	173.7	211.7	112.6	177.8	151.3
Employee	99.6	74.9	91.7	142.5	67.8	104.7	138.1	86.3	139.8	108.7
Physician Age										
Less than 36 years	96.1	77.6	90.3	124.4	63.2	112.5	113.1	.	152.3	.
36-45 years	138.8	94.6	136.0	207.6	81.4	170.4	188.3	106.0	154.4	114.5
46-55 years	151.9	105.9	128.3	202.7	105.6	193.8	201.4	102.6	180.1	132.2
56-65 years	131.2	96.8	114.1	184.7	92.9	132.6	180.5	98.2	174.1	138.3
66 or more years	95.7	72.4	94.9	93.1	.	.	.	100.4	.	.

Source: 1988 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

b. Includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 42 (continued). **Standard Error of Mean Physician Net Income (in thousands of dollars) after Expenses before Taxes, 1987[a]**

		Specialty								
	All Physicians[b]	GP/FP	Int Med	Surg	Ped	Ob/Gyn	Rad	Psych	Anes	Path
All Physicians	1.88	2.74	3.57	6.21	2.75	10.31	6.25	3.56	4.98	5.70
Census Division										
New England	4.23	7.95	8.98	11.33	.	.	.	8.87	.	.
Middle Atlantic	3.84	5.65	8.96	10.40	7.97	15.81	.	7.12	15.51	.
East North Central	6.06	5.17	7.45	21.32	5.17	70.56	11.47	12.50	10.53	.
West North Central	5.77	4.34	23.13	14.70	.	.	.	.	.	.
South Atlantic	3.81	6.22	9.16	10.54	5.30	18.77	12.62	7.18	13.43	.
East South Central	7.51	8.40	20.84	19.71	.	.	.	.	.	.
West South Central	7.65	4.42	11.03	26.86	8.43	15.26	21.41	14.26	.	.
Mountain	6.39	9.01	.	16.67	.	.	.	.	.	.
Pacific	4.83	14.92	5.95	17.61	8.24	12.56	15.54	9.14	11.18	.
Type of Practice										
Solo	3.10	5.66	4.51	6.64	5.37	20.32	12.44	4.32	11.50	.
Non-solo	2.37	2.45	5.02	9.93	3.21	7.95	6.76	5.87	5.50	5.74
Location										
Nonmetropolitan	4.13	3.88	11.15	12.43	.	.	12.91	.	.	.
Metropolitan—										
Less than 1,000,000	3.37	2.89	6.59	10.41	4.94	21.61	11.03	4.38	6.91	7.33
1,000,000 and over	2.35	6.91	4.21	7.81	3.46	7.88	7.61	5.33	7.56	10.29
Employment Status										
Self-employed	2.53	3.60	4.34	7.23	3.78	12.01	8.90	5.02	6.14	10.13
Employee	1.81	2.27	5.12	7.52	3.07	8.26	6.34	3.82	7.61	5.90
Physician Age										
Less than 36 years	2.78	3.20	6.26	8.99	5.38	25.93	8.22	.	10.66	.
36-45 years	3.39	6.98	7.29	11.51	4.12	9.77	12.77	8.38	8.78	9.35
46-55 years	4.77	6.83	6.16	12.73	6.75	31.77	11.06	4.97	9.01	11.25
56-65 years	3.54	4.56	7.06	11.40	5.35	10.65	14.86	5.91	11.04	11.06
66 or more years	4.19	6.33	7.73	9.11	.	.	.	12.16	.	.

Table 43. **Mean Physician Net Income (in thousands of dollars) after Expenses before Taxes, 1978-79, 1981-87**[a]

	1978	1979	1981	1982	1983	1984	1985	1986	1987
All Physicians	64.6	77.4	89.9	97.7	104.1	108.4	112.2	119.5	132.3
Specialty									
General/Family Practice	53.7	60.7	71.5	71.4	66.9	71.6	77.9	80.3	91.5
Internal Medicine	62.5	74.3	83.4	86.9	94.6	104.2	102.0	109.4	121.8
Surgery	80.2	94.5	114.5	128.6	144.3	151.0	155.0	162.4	187.9
Pediatrics	49.7	58.2	63.5	70.5	70.8	73.7	76.2	81.8	85.3
Obstetrics/Gynecology	70.0	90.7	111.0	112.3	118.1	118.8	124.3	135.9	163.2
Radiology	81.3	95.8	108.0	133.3	144.3	139.7	144.3	168.8	180.7
Psychiatry	49.7	61.5	70.5	75.8	79.2	85.1	87.2	91.5	102.7
Anesthesiology	72.6	90.7	115.2	131.9	141.6	143.9	142.7	150.2	163.1
Census Division									
New England	55.2	65.0	83.0	80.3	84.9	87.8	106.0	107.1	110.6
Middle Atlantic	58.0	72.1	82.4	89.8	98.7	99.3	106.6	114.6	126.1
East North Central	69.4	80.7	96.4	105.2	111.1	109.8	119.3	126.6	137.6
West North Central	69.5	78.2	85.6	105.7	107.7	109.1	112.1	120.7	133.9
South Atlantic	64.0	78.6	91.4	95.9	104.5	113.6	111.2	119.6	133.8
East South Central	79.2	86.0	94.8	103.8	111.3	121.8	114.8	122.6	141.2
West South Central	69.7	86.3	97.9	118.4	122.9	122.2	124.6	129.0	140.4
Mountain	61.2	71.9	87.9	93.0	89.2	101.5	95.9	108.5	125.5
Pacific	63.7	77.9	88.8	91.0	100.5	109.2	112.0	119.0	135.4
Type of Practice									
Solo	60.4	74.7	86.1	94.0	98.7	104.8	111.0	115.5	127.8
Non-solo	68.9	79.9	93.3	100.5	108.5	111.2	113.0	122.1	135.0
Location									
Nonmetropolitan	63.7	73.1	85.9	86.9	86.9	91.3	93.3	107.7	117.9
Metropolitan—									
Less than 1,000,000	66.7	78.1	94.2	101.5	108.7	115.2	117.2	124.5	140.4
1,000,000 and over	62.9	77.7	86.9	96.7	103.8	106.3	111.6	117.5	127.9
Physician Age									
Less than 36 years	48.8	61.8	64.4	70.9	77.3	79.6	84.3	90.0	96.1
36-45 years	72.2	85.0	97.9	105.5	106.7	117.4	115.7	124.4	138.8
46-55 years	73.4	88.1	105.9	115.1	129.9	126.0	133.6	140.2	151.9
56-65 years	63.3	75.5	93.1	97.7	101.1	103.0	111.9	119.7	131.2
66 or more years	41.8	56.2	64.8	62.5	72.0	81.7	88.6	83.0	95.7

Source: 1982-88, AMA Socioeconomic Monitoring System core surveys. 1979-80, AMA Periodic Survey of Physicians. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. Data, other than in the specialty breakdown, are based on responses from physicians in all specialties. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 43 (continued). **Standard Error of the Mean Physician Net Income (in thousands of dollars) after Expenses before Taxes , 1978-79, 1981-87[a]**

	1978	1979	1981	1982	1983	1984	1985	1986	1987
All Physicians	0.64	0.71	1.50	1.22	1.38	1.29	1.37	1.41	1.88
Specialty									
General/Family Practice	1.08	1.28	3.22	1.75	1.71	1.73	1.95	2.15	2.74
Internal Medicine	1.40	1.57	3.77	2.68	3.57	3.39	3.23	3.02	3.57
Surgery	1.82	1.72	3.82	3.92	4.14	4.08	4.34	4.10	6.21
Pediatrics	1.60	1.50	4.82	2.86	3.55	2.53	2.50	2.38	2.75
Obstetrics/Gynecology	2.12	2.77	8.85	4.58	4.86	3.82	4.30	4.67	10.31
Radiology	2.92	5.10	3.70	3.84	4.75	4.76	4.55	5.23	6.25
Psychiatry	1.29	2.05	2.31	2.59	2.61	2.21	3.06	2.69	3.56
Anesthesiology	2.72	2.59	4.33	4.23	3.97	4.38	5.17	4.30	4.98
Census Division									
New England	2.08	2.14	7.54	3.39	3.60	3.45	4.94	4.81	4.23
Middle Atlantic	1.62	1.79	4.24	3.13	3.99	2.84	3.00	3.33	3.84
East North Central	1.67	1.65	4.27	3.05	3.96	3.17	4.05	4.10	6.06
West North Central	2.54	2.08	3.53	4.58	6.02	5.17	6.22	5.02	5.77
South Atlantic	1.63	1.68	3.43	2.78	3.01	3.44	3.33	3.08	3.81
East South Central	3.36	4.03	6.07	4.20	5.24	6.00	5.96	6.63	7.51
West South Central	2.28	2.78	3.90	5.23	4.48	4.58	4.56	4.87	7.65
Mountain	2.24	2.40	4.60	4.81	4.36	4.31	4.02	5.00	6.39
Pacific	1.31	1.71	3.53	2.69	2.96	3.12	3.05	3.50	4.83
Type of Practice									
Solo	0.91	1.06	2.25	1.91	2.07	2.00	2.13	2.26	3.10
Non-solo	0.89	0.95	2.01	1.57	1.84	1.67	1.79	1.81	2.37
Location									
Nonmetropolitan	1.70	2.33	2.91	2.81	2.72	3.07	3.19	4.33	4.13
Metropolitan—									
Less than 1,000,000	1.05	1.05	2.43	1.79	2.02	2.19	2.18	2.11	3.37
1,000,000 and over	0.90	1.04	2.21	1.93	2.20	1.75	2.01	2.11	2.35
Physician Age									
Less than 36 years	1.53	1.91	2.34	2.16	2.34	2.49	2.59	2.51	2.78
36-45 years	1.27	1.36	2.58	2.40	2.24	2.35	2.15	2.39	3.39
46-55 years	1.22	1.44	3.54	2.55	3.42	2.91	3.27	3.40	4.77
56-65 years	1.28	1.37	4.04	2.41	3.09	2.34	3.10	3.08	3.54
66 or more years	1.39	1.65	3.05	2.79	3.11	4.30	5.73	3.28	4.19

Table 44. **Twenty-fifth Percentile Physician Net Income (in thousands of dollars) after Expense before Taxes, 1987[a]**

	All Physicians[b]	Specialty								
		GP/FP	Int Med	Surg	Ped	Ob/Gyn	Rad	Psych	Anes	Path
All Physicians	74	58	70	102	55	100	110	73	115	80
Census Division										
New England	70	60	70	98	.	.	.	70	.	.
Middle Atlantic	70	56	70	92	50	113	.	78	80	.
East North Central	73	57	73	108	54	108	131	76	130	.
West North Central	78	71	80	110	.	.	.	.	.	.
South Atlantic	75	52	76	109	68	92	115	73	110	.
East South Central	75	56	74	110	.	.	.	.	.	.
West South Central	75	63	70	100	55	81	130	77	.	.
Mountain	70	55	.	100	.	.	.	.	.	.
Pacific	78	60	70	140	70	110	100	65	120	.
Type of Practice										
Solo	71	55	66	96	50	102	100	75	120	.
Non-solo	75	60	74	120	55	100	119	72	112	85
Location										
Nonmetropolitan	70	58	74	100	.	.	135	.	.	.
Metropolitan—										
Less than 1,000,000	75	58	70	118	52	100	120	72	128	90
1,000,000 and over	74	58	70	98	57	100	100	75	102	74
Employment Status										
Self-employed	80	60	75	110	62	108	140	80	138	100
Employee	65	56	60	88	48	64	94	70	100	75
Physician Age										
Less than 36 years	55	54	52	61	43	40	82	.	100	.
36-45 years	77	60	77	120	55	102	120	75	110	75
46-55 years	88	65	80	114	66	120	150	78	144	75
56-65 years	77	67	70	117	67	81	115	74	144	85
66 or more years	53	45	60	53	.	.	.	56	.	.

Source: 1988 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

b. Includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 45. **Median Physician Net Income (in thousands of dollars) after Expenses before Taxes, 1987**[a]

		Specialty								
	All Physicians[b]	GP/FP	Int Med	Surg	Ped	Ob/Gyn	Rad	Psych	Anes	Path
All Physicians	108	80	100	153	77	145	170	90	150	100
Census Division										
New England	98	73	92	150	.	.	.	92	.	.
Middle Atlantic	100	80	100	136	78	150	.	93	145	.
East North Central	105	72	96	155	75	160	171	100	178	.
West North Central	114	89	130	190	.	.	.	.	.	.
South Atlantic	115	70	110	150	88	150	175	85	150	.
East South Central	111	80	100	180	.	.	.	.	.	.
West South Central	110	79	112	160	70	115	180	98	.	.
Mountain	110	72	.	156	.	.	.	.	.	.
Pacific	110	95	100	171	96	150	180	80	144	.
Type of Practice										
Solo	108	79	100	144	76	145	110	99	148	.
Non-solo	107	80	100	173	78	142	175	84	150	115
Location										
Nonmetropolitan	100	77	115	136	.	.	180		.	.
Metropolitan—										
Less than 1,000,000	110	76	100	165	76	150	190	85	170	120
1,000,000 and over	105	87	95	150	78	134	140	95	148	85
Employment Status										
Self-employed	120	85	115	160	90	150	200	100	180	150
Employee	85	70	80	130	65	100	130	80	125	93
Physician Age										
Less than 36 years	80	70	75	110	56	75	110	.	124	.
36-45 years	111	80	110	175	74	151	150	90	135	100
46-55 years	128	92	115	162	93	150	185	98	180	100
56-65 years	110	87	95	159	100	120	192	84	160	120
66 or more years	80	60	80	72	.	.	.	72	.	.

Source: 1988 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

b. Includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 46. **Seventy-fifth Percentile Physician Net Income (in thousands of dollars) after Expenses before Taxes, 1987**[a]

	All Physicians[b]	Specialty								
		GP/FP	Int Med	Surg	Ped	Ob/Gyn	Rad	Psych	Anes	Path
All Physicians	163	110	146	230	110	195	225	116	200	175
Census Division										
New England	140	85	121	206	.	.	.	108	.	.
Middle Atlantic	150	106	150	225	120	220	.	112	180	.
East North Central	160	103	137	246	100	194	220	124	213	.
West North Central	162	118	195	250	.	.	.	.	.	.
South Atlantic	170	120	155	200	117	205	250	125	200	.
East South Central	180	120	190	250	.	.	.	.	.	.
West South Central	175	110	170	250	96	175	240	130	.	.
Mountain	162	120	.	240	.	.	.	.	.	.
Pacific	170	120	135	250	135	176	230	107	173	.
Type of Practice										
Solo	153	120	139	205	108	200	180	126	200	.
Non-solo	170	105	150	246	110	194	228	105	200	180
Location										
Nonmetropolitan	146	118	146	212	.	.	266	.	.	.
Metropolitan—										
Less than 1,000,000	175	101	150	245	112	202	250	108	210	180
1,000,000 and over	156	115	145	225	108	180	195	120	190	170
Employment Status										
Self-employed	180	120	155	240	120	203	250	134	213	200
Employee	119	90	100	195	80	150	185	100	160	140
Physician Age										
Less than 36 years	115	93	100	160	75	143	130	.	200	.
36-45 years	170	115	155	250	100	200	230	116	190	140
46-55 years	182	132	150	244	150	204	231	120	200	190
56-65 years	165	123	146	225	117	170	220	110	200	182
66 or more years	120	93	120	125	.	.	.	112	.	.

Source: 1988 AMA Socioeconomic Monitoring System core survey. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. All data are weighted to adjust for nonresponse bias. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

b. Includes physicians in specialties not listed separately.

. Indicates fewer than twenty observations.

Table 47. **Twenty-fifth Percentile Physician Net Income (in thousands of dollars) after Expenses before Taxes, 1978-79, 1981-87**[a]

	1978	1979	1981	1982	1983	1984	1985	1986	1987
All Physicians	40	49	50	55	60	63	65	70	74
Specialty									
General/Family Practice	35	39	42	45	42	45	50	53	58
Internal Medicine	40	47	45	50	57	66	62	67	70
Surgery	50	60	63	71	87	90	87	95	102
Pediatrics	32	40	38	43	42	46	50	55	55
Obstetrics/Gynecology	48	60	60	66	70	80	80	89	100
Radiology	58	65	65	80	90	90	89	120	110
Psychiatry	35	40	46	52	54	60	55	65	73
Anesthesiology	54	68	75	90	100	98	99	110	115
Census Division									
New England	35	42	48	48	51	60	27	70	70
Middle Atlantic	33	42	48	50	55	57	33	68	70
East North Central	44	50	51	60	62	70	40	74	73
West North Central	43	54	55	60	60	63	45	75	78
South Atlantic	43	50	48	55	60	62	47	68	75
East South Central	50	48	48	60	65	65	54	65	75
West South Central	45	55	55	62	70	70	50	71	75
Mountain	40	50	50	52	54	60	51	60	70
Pacific	40	48	48	53	60	68	51	70	78
Type of Practice									
Solo	37	45	45	51	55	60	60	65	71
Non-solo	45	50	53	58	63	66	65	71	75
Location									
Nonmetropolitan	40	48	50	54	52	50	60	66	70
Metropolitan—									
Less than 1,000,000	42	50	52	58	63	65	68	71	75
1,000,000 and over	40	48	48	54	58	65	63	70	74
Physician Age									
Less than 36 years	31	40	36	42	45	45	49	58	55
36-45 years	48	57	57	60	62	71	70	75	77
46-55 years	50	60	62	72	77	76	80	83	88
56-65 years	40	50	55	58	60	64	65	70	77
66 or more years	22	30	36	32	35	40	45	49	53

Source: 1982-88, AMA Socioeconomic Monitoring System core surveys. 1979-80, AMA Periodic Surveys of Physicians. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. Data, other than in the specialty breakdown, are based on responses from physicians in all specialties. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 48. **Median Physician Net Income (in thousands of dollars) after Expenses before Taxes, 1978-79, 1981-87**[a]

	1978	1979	1981	1982	1983	1984	1985	1986	1987
All Physicians	60	70	75	82	88	92	94	100	108
Specialty									
General/Family Practice	50	55	60	63	60	64	70	75	80
Internal Medicine	58	68	72	75	83	90	90	95	100
Surgery	71	85	100	110	124	128	129	141	153
Pediatrics	48	55	55	62	62	67	70	75	77
Obstetrics/Gynecology	68	81	96	107	104	110	120	127	145
Radiology	80	85	105	120	128	122	135	155	170
Psychiatry	48	56	64	68	70	80	80	82	90
Anesthesiology	70	85	105	120	137	145	133	149	150
Census Division									
New England	51	60	65	71	77	80	57	92	98
Middle Atlantic	50	60	70	75	80	85	61	95	100
East North Central	61	75	80	90	90	98	71	101	105
West North Central	60	72	80	90	85	90	82	105	114
South Atlantic	60	72	77	80	89	91	79	100	115
East South Central	75	80	80	90	100	100	85	100	111
West South Central	64	75	80	100	103	105	91	106	110
Mountain	56	69	74	81	80	91	84	90	110
Pacific	60	70	77	80	90	95	90	100	110
Type of Practice									
Solo	55	65	72	79	83	90	94	98	108
Non-solo	63	72	80	85	90	94	95	100	107
Location									
Nonmetropolitan	60	65	75	76	78	78	84	90	100
Metropolitan—									
Less than 1,000,000	60	70	79	87	92	97	100	104	110
1,000,000 and over	60	70	72	80	86	92	93	98	105
Physician Age									
Less than 36 years	44	55	55	60	65	68	72	78	80
36-45 years	65	78	82	90	90	100	100	103	111
46-55 years	70	80	90	100	110	110	115	120	128
56-65 years	59	69	78	85	86	92	93	100	110
66 or more years	37	50	55	55	60	68	73	70	80

Source: 1982-88, AMA Socioeconomic Monitoring System core surveys. 1979-80, AMA Periodic Surveys of Physicians. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

[a] Data, other than in the specialty breakdown, are based on responses from physicians in all specialties. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Table 49. **Seventy-fifth Percentile Physician Net Income (in thousands of dollars) after Expenses before Taxes, 1978-79, 1981-87[a]**

	1978	1979	1981	1982	1983	1984	1985	1986	1987
All Physicians	80	98	112	121	130	135	140	150	163
Specialty									
General/Family Practice	70	75	83	90	85	89	95	100	110
Internal Medicine	80	90	102	110	119	127	123	130	146
Surgery	100	112	141	151	176	183	196	200	230
Pediatrics	64	74	74	90	85	92	92	100	110
Obstetrics/Gynecology	86	113	134	144	150	150	159	170	195
Radiology	100	110	149	172	185	185	195	210	225
Psychiatry	60	76	87	89	95	105	105	106	116
Anesthesiology	91	108	145	168	174	185	170	195	200
Census Division									
New England	70	80	90	100	101	105	94	130	140
Middle Atlantic	75	90	100	115	120	125	104	140	150
East North Central	83	100	118	132	140	133	117	150	160
West North Central	84	98	110	131	135	130	111	142	162
South Atlantic	80	100	120	121	131	140	130	150	170
East South Central	100	110	130	135	141	163	150	146	180
West South Central	90	105	130	150	160	150	149	160	175
Mountain	80	88	117	117	105	125	140	140	162
Pacific	79	97	112	113	126	140	133	150	170
Type of Practice									
Solo	75	92	106	120	124	130	142	145	153
Non-solo	85	100	118	125	135	139	139	150	170
Location									
Nonmetropolitan	80	90	113	107	115	120	120	129	146
Metropolitan—									
Less than 1,000,000	83	100	120	130	139	144	150	159	175
1,000,000 and over	80	96	110	120	127	130	137	145	156
Physician Age									
Less than 36 years	60	75	80	90	97	100	100	110	115
36-45 years	90	100	123	131	135	150	142	150	170
46-55 years	90	103	126	144	154	155	160	175	182
56-65 years	77	91	111	120	121	125	140	150	165
66 or more years	57	73	82	79	91	100	101	100	120

Source: 1982-88, AMA Socioeconomic Monitoring System core surveys. 1979-80, AMA Periodic Surveys of Physicians. The population from which samples are drawn includes only active nonfederal patient care physicians, excluding residents.

a. Data, other than in the specialty breakdown, are based on responses from physicians in all specialties. All data are weighted to adjust for nonresponse bias. This will cause figures to differ from those reported in previous editions of the Gray Book. See Appendix B for information on weighting and computation procedures. See Appendix D for information on definitions.

Appendices

Design and Methodology of the AMA Socioeconomic Monitoring System
Weighting and Computation Methodology
SMS Questionnaire Summary
Definitions of Variables

Appendix A
The Design and Methodology of the AMA Socioeconomic Monitoring System

The Socioeconomic Monitoring System (SMS) was developed in 1981 in response to the need of physicians and policymakers for more timely and frequent socioeconomic information on the practice of medicine than had been available in the past. This program represents an outgrowth of 20 years of AMA experience in monitoring socioeconomic aspects of medical practice. Its predecessor, the Periodic Survey of Physicians (PSP) collected similar information on an annual basis. The seventh full program year for SMS will be completed in 1988.

SMS is designed to provide periodic information on a range of characteristics of medical practice, such as physicians' earnings, expenses, work patterns, and fees. In addition, a portion of each SMS survey is devoted to collecting information regarding current issues facing physicians.

The purpose of this paper is to provide a description of the current SMS program design. The first section provides an overview of program characteristics. This is followed by discussions of the SMS survey sample design, questionnaire content, field procedures, and aspects of reporting SMS results.

Overview of SMS Program Characteristics

The two SMS surveys conducted this year include an annual core survey and a supplemental survey. The core and supplemental surveys differ in the range of information collected, sample size, and the level of detail for which results are reported. The purpose of the annual core survey is to provide current data on a full range of economic and practice characteristics each year. The supplemental survey focuses on a more limited range of characteristics—those for which changes occur rapidly and those for which information is needed on a more frequent basis. The supplemental survey is also used to obtain information on topics of current policy concern. The average core survey interview lasts 25 minutes, while the supplemental survey averages 16 minutes in length.

The annual core survey obtained data from approximately 4,000 physicians; the supplemental survey obtained data from approximately 2,800 physicians. The sample size is the primary determinant of the level of disaggregation at which results can be reliably reported. Results are disaggregated into a larger number of specialties and geographical areas for the core survey than for the supplemental survey.

The 1988 core survey was fielded from March through July. The timing of the beginning of the core survey is designed to coincide with the income tax return filing deadline in order to improve the reliability of information that can be obtained on physician earnings and practice expenses for the previous year. The supplemental survey in 1988 was fielded from September through November. The field periods for the core and supplemental surveys were respectively 21 and 12 weeks.

Compared with the two surveys in 1986, 1987, and 1988, three surveys were fielded in 1985, and four were fielded in each prior year of the SMS program. The additional surveys in previous years were similar in nature to the 1988 supplemental survey. While the number of respondents to core surveys has been approximately 4,000 every year, supplemental surveys prior to 1986 included only about 1,200 respondents each.

This appendix is an update of an article by Mary Lou S. White, in R.A. Reynolds and D. J. Duann (Editors), *1985 Socioeconomic Characteristics of Medical Practice* (American Medical Association, 1985).

Sample Design

The SMS surveys are designed to provide representative information on the population of all nonfederal physicians who spend the greatest proportion of their time in patient care activities. This includes both office and hospital-based physicians, but excludes residents. Samples for SMS surveys are selected from the AMA Physician Masterfile. The Masterfile contains current and historical information on every Doctor of Medicine in the United States, including both members and nonmembers of the AMA. Graduates of U.S. medical schools who are temporarily practicing overseas and graduates of foreign medical schools who live in the United States are also included on the file.

Data included on the Masterfile are obtained from primary sources, including many organizations and institutions. The only information obtained directly from individual physicians concerns current professional activities and preferred mailing addresses. These data are obtained on a quadrennial basis from the entire U.S. physician population and on a monthly basis from those physicians with changes in address or professional status. These changes may be signaled by input from professional organizations, AMA mailings, or by physician correspondence.

In addition to limiting the sample to nonfederal patient care physicians who have completed their residency programs, the following exclusions are made:

- Doctors of Osteopathy;
- graduates of foreign medical schools who are only temporarily licensed to practice in the United States;
- physicians for whom no current address is available; and
- physicians who were sampled in SMS surveys during the last three years.

Further exclusions are made after sample selection. These include:

- physicians who spend fewer than 20 hours per week in patient care activities or are federal physicians as determined from screening questions at the beginning of each interview, and
- those who cannot be located by mail or telephone after exhaustive tracking efforts are made.

The sample design utilized for SMS is a stratified random sample with systematic selection from the listing of eligible physicians on the AMA Physician Masterfile. The strata are defined by nine major specialty groupings and ten geographical regions of approximately equal size. The specialty information used from the Masterfile reflect physician self-designated practice specialty. Systematic selection within each stratum assures that each specialty group and region is proportionally represented in the sample. The strata definitions are shown in Table 1. Stratification is used in SMS to increase the precision of certain sample estimates and to facilitate the analysis of individual strata. Once the sample is selected, the representativeness of each stratum is reviewed to ensure that it is consistent with the stratum's population proportion.

In order to provide reliable estimates of short-term changes in certain indicators, SMS samples are designed to include a panel component. The panel consists of a portion of the sample from one SMS survey which is reinterviewed in a subsequent SMS survey. Approximately 35 percent of the completed interviews are conducted as reinterviews with physicians who had been initially interviewed in a similar survey in the previous year. The SMS program uses annual reinterviews of this type in order to monitor annual changes in various characteristics. Prior to 1984, much experimentation was done with the reinterview interval to optimize its usefulness. The decision to annually reinterview a portion of the sample was made because reports of annual changes provide more useful data than changes over shorter periods.

Questionnaire Content

The SMS questionnaire consists of three distinct sections:

- screening questions to verify the physician's self-designated practice specialty and eligibility for the survey;
- a main questionnaire to collect information on practice characteristics, hours worked, volume of services, fees for selected procedures, income, and expenses; and
- special topics questions to provide information on emerging socioeconomic issues.

The screening and main questionnaire portions of the survey are identical in the core and supplemen-

Table 1. **SMS Survey Sample Strata**

Specialty Strata[a]

1. General Practice, Family Practice
2. Allergy, Cardiovascular Diseases, Gastroenterology, Internal Medicine, Pulmonary Diseases
3. General Surgery, Neurosurgery, Ophthalmology, Orthopedic Surgery, Plastic Surgery, Colon and Rectal Surgery, Thoracic Surgery, Urology
4. Pediatrics, Pediatric Allergy, Pediatric Cardiology
5. Obstetrics and Gynecology
6. Radiology, Diagnostic Radiology, Therapeutic Radiology
7. Psychiatry, Child Psychiatry
8. Anesthesiology
9. Aerospace Medicine, Neurology, Occupational Medicine, Physical Medicine and Rehabilitation, General Preventive Medicine, Public Health, Dermatology, Pathology, Forensic Pathology, Other Specialty, Unspecified

State Strata

1. Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
2. New York
3. Delaware, New Jersey, Pennsylvania, West Virginia
4. District of Columbia, Georgia, Maryland, North Carolina, South Carolina, Virginia
5. Alabama, Florida, Kentucky, Mississippi, Tennessee
6. Arkansas, Louisiana, Missouri, Oklahoma, Texas
7. Indiana, Michigan, Ohio
8. Illinois, Iowa, Minnesota, Wisconsin
9. Alaska, Arizona, Colorado, Hawaii, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, South Dakota, Oregon, Utah, Wyoming, Washington
10. California

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a. The AMA Physician Masterfile classification of self-designated practice specialties is used in the specialty strata listing.

tal surveys in order to provide the basis for estimating levels and changes in economic characteristics of medical practice. However, the core survey includes an expanded main questionnaire portion to provide additional information on practice characteristics and information on annual income and expenses for the previous year. The information requested in this expanded portion remains constant from one core survey to the next.

Questions for the main questionnaire were developed from a review of past surveys and through consultation with physicians, sources within the AMA, and Mathematica Policy Research, Inc., an independent consulting firm that assisted in the development of the SMS program. Efforts were made to maintain consistency of questions with those from the PSP from which trend information has been established over a period of years. However, modifications are made where it is deemed that the desired information would be more accurate if questions were changed. In addition, questions in the SMS surveys are designed so that physicians are asked only questions that are generally relevant to their specialty. A summary of the questionnaire used in the SMS surveys upon which this volume is based is included in Appendix C.

Special topics covered in SMS surveys during the past year have included:

- physician advertising;
- third-party payments to physicians;
- patient characteristics;
- physician treatment of AIDS patients;
- professional liability; and
- medical practice environment.

Special topics questions are formulated and reviewed by members of AMA staff representing a broad range of activity areas. All questions that have not been used previously in SMS surveys are pretested prior to the survey fielding to evaluate the wording and ordering of questions and to determine the ability of respondents to provide the desired information.

Field Procedures

The SMS data collection plan is designed to provide reliable information within a tight time schedule. The survey is completed primarily by telephone. Telephone administration significantly reduces the time required to produce survey results and increases the response rate. The surveys are administered by independent consulting firms contracted by the AMA. Mathematica Policy Research, Inc. of Princeton, New Jersey (MPR) has conducted interviews for all surveys for the SMS program since the second quarter of 1983.

Field procedures developed for SMS surveys reflect a complex effort to minimize bias from nonresponse and accommodate the busy schedules of physicians through careful advance preparation and intensive follow-up efforts to complete interviews. The activities involved in this effort are described below.

Advance Letter. Two weeks prior to data collection, advance letters are sent to each physician selected to be interviewed or reinterviewed. Each letter includes a brief description of the interview, the project sponsorship, identification of the survey contractor, information that the physician will be receiving a telephone call from an interviewer on the contractor's staff, and a pledge of data confidentiality. Each letter is printed on AMA letterhead and bears the signature of James H. Sammons, M.D., executive vice president of the American Medical Association. If a letter is returned because of an insufficient address, a search is initiated to obtain updated information so the physician may be sent another letter.

When the SMS program was initiated, many physicians indicated that they could not provide certain types of information during a telephone interview without advance preparation. As a result, questionnaire summaries were designed to provide the physician with a listing of the specific medical and surgical procedures for which fees will be requested, as well as with a description of income and expense questions. Since the third-quarter 1983 survey, this insert has been enclosed with each advance letter.

Telephone Search. Because inadequate coverage is a potential problem for telephone surveys, the AMA Division of Survey and Data Resources expends considerable effort to locate sample physicians. The basic sources used in the telephone look-up include directory assistance, state and county medical societies, state licensing boards, and hospitals. If it is impossible to obtain a telephone listing for a physician from these sources, the next steps include reverifying the physician's data contained on the AMA Physician Masterfile; contacting state, county, and specialty societies; initiating traces of physicians from former addresses appearing on the Masterfile; and checking medical society directories. This ensures that the proportion of physicians in each sample stratum most accurately reflects that of the population. Approximately one week prior to data collection, the survey contractor is provided names, addresses, and telephone numbers of physicians selected from the AMA Physician Masterfile.

Interviewer Training. Two days of study-specific training in addition to general training are provided to each interviewer before working on SMS surveys. Training includes a detailed review of each question (including instruction on pronunciation of various medical terms), practice interviews, and a review of interviewing and administrative procedures. AMA staff actively participate in the training process either in person or via teleconferencing to assure that all project specifications and instructions are clearly communicated, understood, and implemented.

Table 2. **Number of Completed Interviews and Response Rates in SMS Surveys Conducted in 1987 and the 1988 Core Survey**

Survey	Number of Completed Interviews	Response Rate
Core Survey 1987	4,014	66.9%
Supplemental Survey 1987	2,874	69.3%
Core Survey 1988	4,135	70.8%

During training, the contractor actively evaluates each potential interviewer for appropriate survey skills, such as reading ability, voice quality, grasp of the material, and ability to develop rapport with physicians. The highest quality interviewers are then selected to work on the project.

Interview Process. Interviewing is conducted via a Computer Assisted Telephone Interviewing (CATI) process. This system produces a copy of the questionnaire on a computer screen. Responses to the questions are entered directly into the computer using this on-line system during the actual interview, eliminating any keypunching or separate data entry task. This reduces time schedules and maximizes quality by minimizing sources of error. In addition, this system has provided the ability to program range checks whereby a figure that is entered that exceeds the usual range automatically instructs CATI to prompt the interviewer to verify the response. This has helped reduce the number of invalid outlying responses.

A minimum of a 60 percent response rate for each specialty is required in order to regard an SMS survey as complete. Vigorous efforts are made to achieve the cooperation of physicians and meet this standard because of the short field period of SMS surveys. These efforts include the following:

- Appointments for interviews are scheduled at the convenience of physicians at any time 13 hours a day from Monday through Saturday.
- A toll-free number allows physicians to complete the interview at their convenience.
- An optional mail questionnaire, tailored to each specialty and type of practice, is made available to

physicians who indicate a preference for responding to the survey in writing rather than by telephone.

- Repeated callbacks (a minimum of four) to nonrespondents are made before abandoning efforts to interview the physician.
- Letters encouraging participation and addressing specific objectives are sent to physicians who initially refuse to be interviewed.
- Refusal conversion attempts are made by a select group of interviewers. A substantial number of physicians decide to grant an interview at this stage.

The actual response rates achieved on SMS surveys since the beginning of 1987 are shown in Table 2. The results indicate the success of SMS in meeting its minimum 60 percent response rate standard.

Confidentiality. Data are entered via the CATI system and are released only in aggregate form without any individual respondent identifying information.

Quality Control. Each interviewer's work is monitored by the contractor's supervisory staff for both production and quality. AMA staff also monitor interviews by remote telephone hook-up to ensure that a high level of quality is maintained throughout the survey. If indicated, the contractor is instructed to retain interviewers or remove interviewers from the SMS study.

AMA staff also track the SMS survey production. A detailed review is made of all sample disposition, both pending and final, on a weekly basis. As a result of this evaluation, the time schedule is reviewed and necessary recommendations are made to the contractor to enable the survey to be completed during the allotted field period.

As part of the annual SMS program review, the design and methodology are examined with an eye for identifying areas for improvement. Last year, the Center for Health Policy Research and the Division of Survey and Data Resources jointly undertook an evaluation of the impact of survey and item nonresponse rates and various potential methods for adjusting results to correct for nonresponse. The findings of that study and the consequent change in the methodology for computing statistical summary measures of SMS data are reported in Appendix B.

Reporting of SMS Results

Results obtained from SMS surveys are widely disseminated. In order to reach the physician community, results are published periodically in *AMNews*. Dissemination of information pertinent to the public is handled by the AMA Department of Public Information. *Socioeconomic Characteristics of Medical Practice*, or the "Gray Book," is an annual volume designed to provide more detailed results from SMS surveys than can generally be provided through other media.

Data from the SMS also serve as a basis for research on health policy issues. Analyses of such issues are disseminated through professional journals and conferences. This ensures that health policy analysts and researchers are apprised of important findings resulting from this program. Results from SMS surveys are reported at differing levels of detail depending on the nature of the media and the degree of precision of the estimates of physician characteristics deemed appropriate for the report. As indicated previously, data are never reported in any fashion that would allow identification of an individual respondent. Discussions of definitions and computation procedures employed in reporting SMS results are contained in Appendices B and D.

Conclusion

The Socioeconomic Monitoring System exemplifies a long-term commitment on the part of the American Medical Association to obtain valid and reliable socioeconomic information on the practice of medicine. The SMS program complements AMA's other extensive data collection activities and its evolution represents a responsiveness to the need for the highest achievable data quality.

Appendix B
Weighting and Computation Methodology

The AMA's Socioeconomic Monitoring System (SMS) is designed to measure key indicators of the changing medical practice environment in a cost-effective fashion. Cost-effectiveness demands that only a limited percentage of the physician population be contacted each year. Specifically, SMS is based on a random sample drawn from the AMA Physician Masterfile's enumeration of all nonfederal patient care physicians, excluding resident physicians. As such, SMS shares with all sample surveys the limitations that grow out of finite sample size. Thus, SMS is designed to produce reliable estimates for the ten specialty groups and nine census divisions defined in Appendix A of this volume, but is less well suited to provide estimates of the practice environment for more detailed subspecialty or geographic breakdowns. The program is designed to provide estimates of both the yearly level of each indicator as well as measures of change over time.

By design, SMS should measure the changing environment accurately but with some margin for error. There are some sources of imprecision that occur in survey work that can increase the margin for error and introduce bias into the estimates. Variations in response rates across known subpopulations can significantly reduce the ability of a sample survey to describe accurately the changing experience of the population of interest. For example, high response rates from AMA members and low response rates for nonmembers could reduce SMS's ability to represent the experience of the average physician if the experiences of these groups differ.

Even with relatively high response rates, variations in the rates may be sufficient to cause problems in reliably reporting the experiences of physicians. This appendix discusses the record of the SMS program in achieving representative samples, describes the standard statistical technique used to correct for this type of problem, and indicates the computation formulas for statistics reported in this volume.

Since its inception in late 1981, the SMS program has been continuously scrutinized and improved as our experience with this telephone survey program has increased. In 1986, the AMA Center for Health Policy Research created a staff committee with members from each of the departments in the Center as well as the AMA Department of Survey Design and Analysis. This committee was charged with investigating weighting and imputation methods that are frequently used to adjust survey response data to better describe the experience of the underlying population of interest. The committee was asked to recommend a course of action for data reporting conventions in the SMS program.

In September 1986, the committee presented an interim report to the research staff at the AMA. The report reviewed the problems of unit nonresponse and item nonresponse for key variables collected by SMS.

Unit nonresponse occurs when no information at all is collected from a sampled physician because the physician is unlocatable, cannot be contacted, or refuses to be interviewed. Item nonresponse occurs when a physician agrees to be interviewed but chooses not to answer a specific item within the survey. Weighting, imputation, and regression techniques were applied to SMS data and results were compared. There are no clear criteria that permit one to choose the statistical correction most likely to represent the true population value for any indicator. In the case of the SMS variables analyzed by the

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This appendix was prepared by Sara Thran and William D. Marder, Program Administrator and Department Director respectively in the AMA Center for Health Policy Research.

Table 1. **Response Rates for SMS Survey by Demographic and Practice Characteristics, 1987**

	Response Rate		Sample Size	
	Initial	Reinterview	Initial	Reinterview
All Sampled Eligible Physicians	66.4%	81.6%	4142	1696
Years since M.D.				
0-9	74.3[a]	82.2[c]	723	236
10-19	63.3	80.4	1376	556
20-29	64.1	79.1	1171	450
30-39	67.6	82.9	612	322
40 or more	68.5	90.9	260	132
Specialty				
General/Family Practice	67.4[a]	79.5[b]	644	234
Internal Medicine	62.0	76.6	844	337
Surgery	63.5	79.1	938	364
Pediatrics	73.5	89.7	272	126
Obstetrics/Gynecology	66.0	82.7	312	127
Radiology	76.0	92.3	229	104
Psychiatry	66.1	86.9	254	122
Anesthesiology	64.6	83.9	198	93
Pathology	79.1	89.1	86	64
Other	69.6	77.6	365	125
Board Certified				
Yes	66.8	81.8	2961	1197
No	65.5	81.1	1181	499
AMA Membership				
Member	71.2[a]	83.5[c]	2104	960
Nonmember	61.4	79.1	2038	736

a. Within-category differences for the initial sample statistically significant at the p=.001 level.
b. Within-category differences for the reinterview sample statistically significant at the p=.01 level.
c. Within-category differences for the reinterview sample statistically significant at the p=.05 level.

committee, the results for weighting, imputation, and regression corrections for nonresponse were closer to each other than to the unweighted data traditionally reported in the *Socioeconomic Characteristics of Medical Practice* (the "Gray Book"). The committee recommended that serious consideration should be given to reporting results based on weighted data. It suggested that the weights be based on a limited number of physician characteristics known from Masterfile data and should correct for unit nonresponse.

The results reported in this edition of the Gray Book were obtained using the weighting scheme recommended by the committee. Weights were developed for each of the SMS core surveys. The weights were derived by first dividing the AMA Physician Masterfile population (using the year-end file from the previous year) and the survey respondents into 200 cells defined by specialty (10 categories), years since M.D. (5 categories), AMA membership status (2 categories), and board certification status (2 categories). Unit response weights were constructed as the ratio of the proportion of physicians in the population to the proportion of SMS respondents in each cell. Second, an eligibility correction was employed. Nonfederal patient care physicians (excluding residents) are eligible for SMS. The eligibility correction divides the subset of the SMS population for which eligibility is known into 40 cells (according to years in practice, AMA membership, sex, and board certification) and calculates the proportion of physicians in each cell

Table 2. **Mean Weights for Socioeconomic Monitoring System 1987 Core Survey**

		Specialty								
	All Physicians	GP/FP	Int Med	Surg	Ped	Ob/Gyn	Rad	Psych	Anes	Path
All Physicians	1.00	1.00	1.14	0.98	0.93	0.92	0.77	1.04	0.99	0.84
Census Division										
New England	1.06	1.07	1.18	1.03	0.97	0.96	0.90	1.02	0.91	1.00
Middle Atlantic	1.04	1.04	1.13	0.99	0.98	0.93	0.82	1.05	1.13	0.98
East North Central	0.97	1.01	1.13	0.96	0.90	0.82	0.78	0.98	0.95	0.76
West North Central	0.95	0.93	1.10	0.92	0.89	0.92	0.76	1.11	0.86	0.73
South Atlantic	1.00	1.00	1.13	1.00	0.93	0.89	0.71	0.99	1.05	0.86
East South Central	0.94	0.96	1.19	0.90	1.00	0.81	0.64	0.94	0.84	0.64
West South Central	0.97	0.96	1.10	0.97	0.87	0.93	0.74	1.08	1.04	0.69
Mountain	0.99	1.04	1.20	0.98	1.08	1.11	0.73	0.97	0.76	0.81
Pacific	1.04	1.04	1.13	1.00	0.91	1.03	0.81	1.22	1.05	0.84
Type of Practice										
Solo	1.05	1.05	1.15	1.00	0.94	0.98	0.75	1.05	1.01	1.14
Non-solo	0.97	0.96	1.13	0.95	0.93	0.88	0.77	1.03	0.99	0.82
Location										
Nonmetropolitan	0.98	1.00	1.14	0.95	0.98	0.79	0.78	0.98	1.11	0.88
Metropolitan—										
Less than 1,000,000	0.99	0.99	1.14	0.97	0.91	0.91	0.76	1.02	0.91	0.83
1,000,000 and over	1.02	1.02	1.13	0.99	0.94	0.97	0.77	1.06	1.02	0.81
Employment Status										
Self-employed	1.01	1.03	1.14	0.98	0.92	0.92	0.77	1.04	0.98	0.80
Employee	0.98	0.92	1.14	0.95	0.97	0.91	0.76	1.04	1.01	0.87
Physician Age										
Less than 36 years	0.80	0.73	0.98	0.72	0.89	0.71	0.56	1.02	0.74	0.71
36-45 years	1.06	1.00	1.29	1.01	1.02	0.87	0.77	1.16	0.98	1.01
46-55 years	1.03	1.04	1.10	0.98	0.89	1.01	0.83	1.10	1.08	0.89
56-65 years	1.01	1.14	1.06	1.01	0.86	0.98	0.84	0.94	1.19	0.69
66 or more years	1.00	1.18	0.92	1.05	0.87	1.05	0.69	0.79	1.28	0.64

who are eligible. This defines the eligibility weight. The overall weight applied for a given respondent is the product of a unit response weight and an eligibility weight. Weights were also constructed for each of the Periodic Surveys of Physicians, similar to the SMS weights but without an eligibility correction.

Table 1 contains information from the 1988 core survey that suggests the need for weighting. Each SMS survey has two components, an initial sample and an annual reinterview component. Table 1 shows the response rates and sample sizes for these two groups of respondents. The reinterview component has a much higher response rate and smaller variations among relevant subpopulations than the initial sample.

The initial sample response rate of 66.4% compares favorably with the Health Care Financing Administration's (HCFA) Physician Practice Cost and Income Survey of 1984-85. The HCFA survey achieved an overall response rate of 68%, with a much longer field period and much larger budget. Of greater concern are the statistically significant variations in response rates in Table 1. These subpopulations represent the dimensions that the Weighting Committee found to be historically the most troublesome in the program. The two areas of greatest concern are the variations by specialty and membership status. Lower response rates in internal medicine and surgery may reflect the "busyness" of physicians in these fields and may introduce downward biases into estimates of hours worked, patient visits, and physician's incomes. Similarly, AMA membership status may be correlated with variables of interest. Efforts have been mounted to limit these variations in response rates. Nonetheless, significant differences remain; statistical techniques have been applied to the data to adjust the estimates.

Table 2 reports the mean values for the weights described above. The subpopulations reported in Table 2 correspond to the most detailed breakdowns reported in the Gray Book. Within these cells, the average value for the weighting variable is highest for physicians in internal medicine who are 36-45 years old. The lowest value for the weighting variable is for radiologists who are less than 36 years old.

The formula for a weighted mean $\bar{X}_W$ using the value of a weight variable w_i is:

$$\bar{X}_W = \frac{\sum_i w_i X_i}{n}$$

where X_i is the variable value for observation i, n is the number of observations. It is assumed that the weights are normalized to sum to the number of observations.

The formula for a weighted standard error of the mean is:

$$\sigma_{\bar{X}_W} = \sqrt{\frac{\sum_i w_i (X_i - \bar{X}_W)^2}{n(n-1)}}$$

Appendix C
SMS Questionnaire Summary

This summary contains questions from the 1987 SMS surveys and the 1988 SMS core survey. Since the questionnaires are quite lengthy, some questions have been omitted from the summary, while others have been paraphrased. However, parts of questions that are paraphrased have been enclosed with square brackets. All questions relating to the statistics appearing in the main body of this book are included in this summary.

Screener Questions (All Surveys)

1. Our records indicate that [MASTERFILE SPECIALTY] is the specialty from which you derive most of your medical income. Is that correct?[a]

   (IF "YES", GO TO Q.2)

   a. What is your primary specialty?

2. During a typical week, do you provide direct patient care for 20 hours a week or more? Direct patient care includes seeing patients and performing surgery, as well as related patient services performed by anesthesiologists, radiologists, and pathologists.

3. Are you currently a full-time, salaried employee of a federal agency such as the U.S. Public Health Service, Veterans Administration, or a military service?

Practice Characteristics (1987 Core Survey)

4. Are you a full or part owner of your main practice, an employee of the practice, or an independent contractor?

   (IF FULL OR PART OWNER, GO TO Q.9)

5. In your main practice, are you employed by a hospital?

6. In your main practice, are you employed by [a government agency]?

7. In your main practice, are you employed by another physician or group of physicians?

8. In your main practice, are you employed by a nongovernment clinic or HMO?

9. Which of the following legal forms of organization best describe your main medical practice?

   a. Sole proprietorship

   b. Partnership

   c. Professional corporation

   d. Investor-owned for-profit corporation

   e. Other

10. Including yourself, how many physicians are in your main practice?

    a. How many of these physicians [illegible]ll or part owners of the practice?

11. In what year did you begin medical practice after completing your undergraduate and graduate medical training?

12. In what year did you start working at your current main medical practice?

Hours and Utilization of Physician Services per Week (1987 Core Survey)

The next few questions are about the number of hours you spent working at several medical and administrative activities during your most recent complete week of practice. Do not include hours spent on call if you were not actually working.

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[a] Masterfile specialty is information obtained from the AMA Physician Masterfile.

All specialties except psychiatry, radiology, anesthesiology, and pathology

13. During your [last] complete week of practice, how many hours did you spend. . .

    a. In the office or in freestanding primary or urgent care centers seeing patients? (Include time spent in all offices if the practice includes multiple offices.)

    b. In the hospital emergency room and in outpatient clinics?

    c. In the operating, labor, or delivery room? Please include waiting time before surgery.

    d. Making hospital rounds, including visits to newborn infants? (Do not include hours spent on call if you were not actually working.)

    e. On house calls and with patients in nursing homes, convalescent homes, or other extended care facilities?

    f. Having telephone conversations with patients or their families, consulting with other physicians, and providing other services to patients such as interpreting lab tests and X-rays?

    g. In administrative activities connected with your practice and other medical facilities, as well as any other professional activities that did not involve patient care?

14. During the [number] of hours you spent in the office or in freestanding or urgent care centers [in your last complete week of practice]. . .

    How many patient visits did you personally have? Please count as one visit every time you saw a patient.

SMS Questionnaire Summary

15. During the [number] hours that you spent [in your last complete week of practice] in hospital emergency rooms and [outpatient clinics]. . .

    How many patient visits did you personally have? Please count as one visit every time you saw a patient.

16. During the [number] hours that you spent seeing patients on house calls, in nursing homes, convalescent homes, and other extended care facilities. . .

    How many patient visits did you personally have? Please count as one visit every time you saw a patient.

17. During the [number] hours spent in the operating, labor, or delivery room, how many operations and deliveries did you perform? Do not include assists.

18. How many assists did you perform during [your last complete week of practice]?

19. During [your last complete week of practice], how many inpatient visits did you make during the [number] hours spent on hospital rounds? Please count as one visit every time you saw a patient.

Fees for Selected Visits (1987 Core Survey)

All specialties except psychiatry, radiology, anesthesiology, and pathology

23 Does your practice provide at least some medical care on a fee-for-service basis?

    (IF "NO", GO TO Q.25)

24. What is your current usual fee for. . .

    a. An office visit with a new patient including an evaluation history, examination, and/or treatment?

    b. An office visit with an established patient including an examination, evaluation, and/or treatment for the same or new illness.

    c. A follow-up medical visit in the hospital, when you charge a separate fee for hospital visits? This visit includes an examination, evaluation, and/or treatment with a new or established patient with the same illness.

Hospital Utilization (1987 Core Survey)

All specialties except radiology, anesthesiology, and pathology

25. During your most recent complete week of practice, how many patients did you personally discharge from the hospital?

26. Among those patients that you discharged in that week, what was [their average length of stay in days]?

27. How many of the [number] patients that you discharged from the hospital that week were Medicare patients?

28. For the [number] of Medicare patients you discharged from the hospital [during your last complete week of practice], what was [their average length of stay in days]?

1987 Income, Expenses, and Weeks Practiced (1988 Core Survey)

Self-employed physicians only

29. Do you share some expenses with other physicians?

30. [In 1987, what (were your/was your share of your practice's) total tax-deductible professional expenses for the following items to the nearest $1,000?][a]

    a. Professional medical liability or malpractice insurance premiums.

    b. Office expenses, including rent or mortgage for office space, utilities, and telephone.

    c. Total nonphysician payroll expenses including fringe benefits.

    d. Medical materials and supplies, such as drugs, x-ray films, and expenses for outside lab work, drugs, and other services.

    e. Depreciation, leases, and rent on medical equipment. Do not include the total purchase price or the replacement value of your medical equipment. Please report only that proportion that was tax-deductible in 1987.

    f. Other professional expenses, such as legal services, accounting services, office management services, professional association memberships, journals and continuing education, professional car upkeep and depreciation, and any other professional expenses [not mentioned].

All physicians

31. During 1987, how many weeks of medical practice did you miss because of . . .

    a. illness or vacation?

    b. military service or professional conferences?

    c. Altogether then you missed [a + b] weeks of practice and practiced [52-a-b] weeks. Is that correct?

    If physician started practice in 1987:

    d. You mentioned earlier that you began practicing in 1987. Excluding the [number] weeks of practice you missed in 1987 because of illness or vacation, and the [number] weeks missed because of military service or professional conferences, for how many weeks did you practice in 1987?

32. During 1987, what was your own net income from medical practice to the nearest $1,000 after expenses but before taxes? Please include all income from fees, salaries, retainers, fringe benefits, and other forms of compensation.

33. Were any contributions made into pension, profit-sharing, or deferred compensation plans for you during 1987?

    (If "YES", ASK PARTS a AND b)

    a. How much was contributed for you to the nearest $1,000?

    b. Did you include this amount in your [number] net income figure for 1987?

Professional Liability (1988 Core Survey)

34. Have any malpractice claims been filed against you during your career?

    (IF "YES", CONTINUE WITH THIS SECTION)

35. How many malpractice claims have been filed against you during your career?

36. How many of these [number] claims were filed during the last five years?

    (IF GREATER THAN 0, CONTINUE)

37. How many of these [number] claims were filed against you during the last twelve months?

Physician Involvement with the Medicare Participation Program (1985 Core Survey)

38. Are you now a participating physician in the Medicare program?

    (By October 10, 1984, all physicians had to decide whether or not to become participating physicians under the revised Medicare program. As a participating physician, all Medicare claims must be assigned.)

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[a] First wording in parentheses is used for physicians in solo practice; second wording is used for physicians in non-solo practice.

Physician Involvement with the Medicare Participation Program (1986 Core Survey)

39. During the last twelve months, did you provide any services to patients whose principal source of payments was Medicare?

    (IF "NO" SKIP Q.39a.)

    a. By October 1, 1984, all physicians had to decide whether or not to become participating physicians under the revised Medicare program. This decision could have been changed by October 1, 1985.

       Are you now a participating physician in the Medicare program? As a participating physician, all Medicare claims must be assigned.

Physician Involvement with the Medicare Participation Program (1987 Core Survey)

40. During the last twelve months, did you provide any services to patients whose principal source of payments was Medicare?

    (IF "NO" SKIP Q.40a.)

    a. By October 1, 1984, all physicians had to decide whether or not to become participating physicians under the revised Medicare program. The most recent date that you could have changed this decision was January 1st of this year.

       Have you signed an agreement to participate in the Medicare program? As a participating physician, all Medicare claims must be assigned.

Physician Involvement with the Medicare Participation Program (1988 Core Survey)

41. During the last twelve months did you provide any services to patients whose principal source of payment was Medicare?

    (IF "NO" SKIP Q.41a.)

    a. By October 1, 1984, all physicians had to decide whether or not to sign agreements to become participating physicians under the newly-established Medicare Participating Physician Program. Several sign-up periods have been offered since then. The last decision deadline was December 31, 1987. (If questionnaire was administered after March 31, then the question reads "The last deadline was March 31, 1988.")

       Did you sign an agreement to participate in the Medicare program that is currently in effect? As a participating physician, assignment must be accepted on all Medicare claims.

Appendix D
Definitions of Variables

This appendix describes definitions used in reporting information from the AMA Socioeconomic Monitoring System (SMS). Changes in methodology over time relating to trends reported in the detailed tabulations in *Socioeconomic Characteristics of Medical Practice* (the "Gray Book") are also discussed. Most such changes relate to differences between SMS surveys and the AMA Periodic Surveys of Physicians (PSP) on which data for years prior to 1981 are based. These changes should be carefully noted when making comparisons of data for years prior to and since 1981. In addition, data published in this edition and the 1987 edition are weighted (see Appendix B). Weighting the data causes the figures to differ from the unweighted information published previously in the 1983-85 Gray Books and the *Profile of Medical Practice* series.

SMS survey questions referenced in this appendix may be found in Appendix C. Tables referred to are those contained in the detailed tabulations.

Sample Population

The population from which samples are drawn for SMS surveys includes all active nonfederal office-based and hospital-based physicians as defined by the AMA Physician Masterfile[a]. Residents are not included in the surveys. The population from which samples were drawn for the PSPs differed by the exclusion of hospital-based physicians. This difference should be recognized in any comparison between PSP and SMS data.

Specialty

Specialty classifications used in reporting SMS data are shown in Table 1. Specialty is determined from responses to Question 1 in SMS surveys. The question used in PSPs from 1978 through 1980 to determine specialty was as follows: "Please give the specialty from which you derived 50% or more of your medical income in [the last year]."

Census Region and Division

States included in each census region and division are shown in Table 2. The state in which each physician was located is identified from the AMA Physician Masterfile.

Type of Practice

Physicians in solo and non-solo practices are distinguished in SMS surveys on the basis of responses to Question 10. Questions similar to Question 10 were included in each of the PSPs. In the few cases where the number of physicians is not known, the practices are characterized as non-solo.

Location

The location classification groups physicians into nonmetropolitan areas, metropolitan areas with a population less than one million persons, and metropolitan areas with a population of one million or more persons. This classification was made on the basis of the demographic county classification contained on the AMA Physician Masterfile. Metropolitan areas include counties within Standard Metropolitan Statistical Areas (SMSAs) and counties outside SMSAs with populations over 50,000.

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[a] Classifications used in the AMA Physician Masterfile are defined in G. Roback, et al., *Physician Characteristics and Distribution in the U.S.*, 1987 Edition (American Medical Association, 1988).

Table 1. **SMS Survey Specialty Classifications**

SMS Specialty Classification	AMA Physician Masterfile Specialties
General/Family Practice	
General/Family Practice	General Practice, Family Practice
Medical Specialties	
Internal Medicine	Allergy, Cardiovascular Diseases, Gastroenterology, Internal Medicine, Pulmonary Diseases
Pediatrics	Pediatrics, Pediatric Allergy, Pediatric Cardiology
Surgical Specialties	
Surgery	General Surgery, Neurosurgery, Ophthalmology, Orthopedic Surgery, Otolaryngology, Plastic Surgery, Colon and Rectal Surgery, Thoracic Surgery, Urology
Obstetrics/Gynecology	Obstetrics and Gynecology
Other Specialties	
Radiology	Radiology, Diagnostic Radiology, Therapeutic Radiology
Psychiatry	Psychiatry, Child Psychiatry
Anesthesiology	Anesthesiology
Pathology	Forensic Pathology, Pathology
Other	Aerospace Medicine, Neurology, Occupational Medicine, Physical Medicine and Rehabilitation, General Preventive Medicine, Public Health, Dermatology, Emergency Medicine, Other Specialty, Unspecified.

Employment Status

Employment status is determined from the response to Question 4. Physicians who respond that they are full or part owners of their main medical practice are deemed to be self-employed, while the remainder are identified as employee physicians. In the 1987 and 1988 SMS core survey, physicians were coded as self-employed, employee, or independent contractor. Independent contractors were classified as employees for the purposes of the employment status breakouts reported here. In the 1982 SMS core survey, the following question was used in place of Question 4: "In your main medical practice, are you: a) self-employed, b) employed by a private practice, c) employed by a hospital, or d) other?" The few physicians for whom employment status was not available were classified as employees.

Age

The age of each physician in PSP and SMS surveys was determined from birthdate information on the AMA Physician Masterfile.

Weeks Practiced per Year (Tables 1 and 2)

Weeks practiced in 1987 was calculated with responses to Questions 31a, 31b and 31c. However, if the physician began practice in 1987, weeks practiced was calculated from responses to 31a, 31b, and 31d. By using this series of questions, a more accurate figure on weeks worked was obtained from physicians that began practice in 1987.

Weeks practiced in 1986 was calculated with responses to Questions 31a and 31b on the 1987 SMS core survey and verified with Question 31c. Question 31c corrected an upward bias in the computational procedure for physicians in their first year of practice. Weeks practiced in 1985 was calculated with responses to Questions 31a and 31b on the 1986 SMS core survey. Prior to the 1986 SMS core survey, the following question was asked:

Table 2. **Census Region and Division Definitions**

Census Region and Division	States
Northeast	
New England	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
Middle Atlantic	New Jersey, New York, Pennsylvania
North Central	
East North Central	Illinois, Indiana, Michigan, Ohio,Wisconsin
West North Central	Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota
South	
South Atlantic	Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia
East South Central	Alabama, Kentucky, Mississippi, Tennessee
West South Central	Arkansas, Louisiana, Oklahoma, Texas
West	
Mountain	Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming
Pacific	Alaska, California, Hawaii, Oregon, Washington

How many weeks did you practice in 198_? Please do not include vacations, sick time, military service, or other similar absences from practice.

Weeks practiced in 1985 and 1986 was calculated as 52 minus the sum of the number of weeks entered in parts a and b of Question 31.

Hours in Professional Activities per Week (Table 3 and 4)

Professional activities includes all patient care activities, administrative activities connected with medical practice, and other professional activities that do not involve patient care, such as medical staff functions, teaching, and research. Hours per week in professional activities in 1987 is based on "TOTAL HOURS" as calculated by the sum of the responses to the individual parts of Question 13 in the 1987 SMS core survey. Follow-up probes detailing the scope of the individual parts of these questions were used to avoid double counting of hours.

Hours in Patient Care Activities per Week (Tables 5 and 6)

Patient care activities include direct patient care and activities related to patient care, such as interpreting lab tests and X-rays and consulting with other physicians. Hours per week in patient care activities from 1982 to 1987 is based on the sum of the responses to parts a-f of Question 13 in the SMS core surveys. Hours per week in patient care activities for 1978 through 1980 was determined from responses to the second of the following questions included in the PSPs:

1. How many total hours did you practice during your most recent complete week of practice (exclude "on-call" hours not actually worked)?

2. How many of these hours were spent in providing direct patient care or patient related services (include patients' lab tests, interpreting X-rays, etc; exclude administrative tasks, meetings, etc.)?

Hours in patient care activities for 1978 through 1980, as defined here, was previously termed hours in direct patient care in the *Profile of Medical Practice* series published by the AMA.

Hours in Direct Patient Care Activities per Week (Tables 7 and 8)

Direct patient care activities include seeing patients in the office, on hospital rounds, in surgery, and in other settings. Hours per week in direct patient care activities for 1982 to 1987 was determined from the sum of responses to parts a-e of Question 13 on the 1982 through 1987 SMS core surveys. Physicians in psychiatry, radiology, anesthesiology, and pathology are not reflected in computations of direct patient care hours in Tables 7 and 8.

Office Hours and Hours on Hospital Rounds per Week (Tables 9-12)

Office hours and hours on hospital rounds per week from 1982 to 1987 are based on responses to Questions 13a and 13d respectively in the SMS core surveys. Physicians in psychiatry, radiology, anesthesiology, and pathology were not asked Questions 13a and 13d and are, therefore, not reflected in the data reported in Tables 9-12. Data on office hours and hours on hospital rounds for years prior to 1987 included in Tables 10 and 12 are based on PSP surveys. The questions used to collect this information in the PSPs were similar to those in the SMS surveys. Although questions on office hours and hours on hospital rounds were asked of physicians in all specialties in the PSPs, responses from physicians in psychiatry, radiology, anesthesiology, and pathology were excluded in computations made for Tables 10 and 12 to make data for years prior to 1982 comparable to the data from the SMS surveys. The specialty exclusions account for differences in data for years prior to 1982 in Tables 10 and 12, other than for individual specialties, from data previously reported in the *Profile of Medical Practice* series.

Hours in Surgery per Week (Tables 13 and 14)

Hours in surgery per week in 1987 is based on responses to Question 13c in the 1987 SMS core survey. Physicians in psychiatry, radiology, anesthesiology, and pathology were not asked Question 13c and are, therefore, not reflected in the data reported in Tables 13 and 14. Hours in surgery per week prior to 1987 in Table 14 are based on responses to a similar question on the earlier SMS core surveys.

Total Patient Visits per Week (Tables 15 and 16)

Total patient visits includes visits in the office, on hospital rounds, in hospital emergency rooms and outpatient clinics, and in all other settings. Total patient visits per week in 1987 is based on the sum of responses to Questions 14-19 on the 1987 SMS core survey. Total patient visits in 1986 was derived from similar questions on the 1986 SMS core survey. Total patient visits per week from 1982 to 1985 is based on responses to the following question:

During [your last complete week of practice], how many . . .

a. Patients did you personally see in the office, including outpatient surgery performed in the office?

b. Operations, deliveries, and assists did you perform in the hospital?

c. Inpatient visits did you make on hospital rounds? Please count as one visit every time you saw a patient.

d. Patients did you see in the emergency room and in outpatient clinics?

e. Patients did you see on house calls or in nursing homes, convalescent homes, or extended care facilities?

Physicians in psychiatry, radiology, anesthesiology, and pathology were not asked either series of questions and are, therefore, not reflected in the data for 1982 to 1987 in Tables 15 and 16. Questions from the PSPs on which data on total patient visits per week for years 1978 and 1979 are as follows:

How many patient visits did you have during your most recent complete week of practice. . .

a. at the office?

b. at the hospital?

c. at all other services (or facilities)?

Although questions on visits were asked of physicians in all specialties in the PSPs, responses from physicians in psychiatry, radiology, anesthesiology, and pathology were excluded in computations made for Table 16 to make data for the years prior to 1982 comparable to the data from the SMS surveys. The specialty exclusions account for differences in data for years prior to 1982 in Table 16, other than for individual specialties, from data previously reported in the *Profile of Medical Practice* series.

Office Visits and Visits on Hospital Rounds per Week (Tables 17-20)

Office visits and visits on hospital rounds per week in 1987 are based on responses to Questions 14 and 19 respectively in the 1987 SMS core survey. Office visits and visits on hospital rounds per week for 1986 were obtained from similar questions on the 1986 SMS core survey. Office visits and visits on hospital rounds per week in the years 1982 to 1985 were based on responses to the question:

During [your last complete week of practice], how many. . .

a. Patients did you personally see in the office, including outpatient surgery performed in the office?

b. Inpatient visits did you make on hospital rounds? Please count as one visit every time you saw a patient.

Physicians in psychiatry, radiology, anesthesiology, and pathology were not asked either set of questions and are, therefore, not reflected in the data in Tables 17-20. Data on office visits and visits on hospital rounds for years prior to 1982 included in Tables 18 and 20 are based on PSP surveys. The questions used to collect this information in the PSPs were similar to those in the SMS surveys. Although questions on office visits and visits on hospital rounds were asked of physicians in all specialties in the PSPs, responses from physicians in psychiatry, radiology, anesthesiology, and pathology were excluded in computing Tables 18 and 20 to make data for years prior to 1982 comparable to the data from the SMS surveys. The specialty exclusions account for differences in data for years prior to 1982 in Tables 18 and 20 from data previously reported in the *Profile of Medical Practice* series.

Surgical Procedures per Week (Tables 21 and 22)

Surgical procedures per week in 1987 is based on responses to Questions 17 and 18 in the 1987 SMS core survey. The identical questions were used on the 1986 SMS core survey to obtain surgical procedures per week in 1986. Surgical procedures per week in 1982 to 1985 were based on responses to the question: "During [your last complete week of practice], how many operations, deliveries, and assists did you perform in the hospital?" Physicians in psychiatry, radiology, anesthesiology, and pathology were not asked either set of questions and are, therefore, not reflected in the data reported in Table 22.

Hospital Utilization (Tables 23-26)

Data on patients discharged from the hospital per week and the length of stay of patients discharged in the years 1982 to 1987 are based on responses to Questions 25 and 26 on the respective SMS core surveys. Physicians in radiology, anesthesiology, and pathology were not asked Questions 25 and 26 and are, therefore, not reflected in the data in Tables 23-26.

Fees (Tables 27-32)

Fees for office visits with new patients, office visits with established patients, and follow-up hospital visits between 1982 and 1987 were obtained in the SMS core surveys from responses to Questions 24a, 24b, and 24c respectively. Physicians in psychiatry, radiology, anesthesiology, and pathology were not asked Question 24 and are, therefore, not reflected in the data in Tables 27-32. In the 1983 and 1984 Gray Books, the fee reported by each physician was weighted by the frequency with which the physician had each type of visit in computing average fees. This weighted average method was not used in the 1985, 1986, or 1987 Gray Books. In 1985 and 1986, the mean physician fee was computed as the simple average of responses. In the 1987 and 1988 Gray Books, the mean physician fee was computed as a simple average of responses weighted for survey nonresponse (see Appendix B). The mean fees reported for all years in Tables 28, 30, and 32 have also been computed in the latter fashion so as to provide consistency among the information reported.

Data on fees for years prior to 1982 in Tables 28, 30, and 32 is based on the following questions from the PSPs:

For each of the following procedures, indicate the number of times you perform the procedure during a typical complete week of practice and the current usual fee you charge for the procedure.

a. Office visit, new patient, brief evaluation, history, examination, and/or treatment.

b. Office visit, established patient, brief examination, evaluation and/or treatment, same or new illness

c. Hospital visit, new or established patient, brief examination, evaluation and/or treatment, same illness

Although these questions were asked of physicians in all specialties in the PSPs, responses from physicians in psychiatry, radiology, anesthesiology, and pathology were excluded from the computations made for Tables 28, 30, and 32 to make data for years prior to 1982 comparable to the data from the SMS surveys. The specialty exclusions account for differences in the data reported for years prior to 1982 in Tables 28, 30, and 32 from data previously reported in the *Profiles of Medical Practice* series.

Professional Expenses (Tables 33-41)

Professional expense information reported in Tables 33-41 refers to tax-deductible professional expenses from medical practice. Data on total professional expenses for 1987are obtained either as the sum of the responses to parts a-e of Question 30 in the 1988 SMS core survey or, in the event any of these responses is missing, as the response to the question, "In 1987, what were your total tax-deductible professional expenses from medical practice to the nearest $1,000? Do not include contributions made for you into deferred compensation plans." Data on professional expenses for 1981 to 1986 in Tables 34, 36, and 37-41 are based on responses to similar questions from the 1982 to 1987 SMS core surveys. The 1987 SMS survey, however, also asked a separate question on 1986 physician payroll expenses. This question was not asked in 1988 or in years prior to 1987. On those surveys, physician payroll expenses are included in the "Other Expenses" category. Data on professional expenses for the years 1978 and 1979 reported in Tables 34, 36, and 37-41 are based on responses to the following question from the PSPs:

What were your total tax-deductible professional expenses in [year]? (If you shared expenses with other physicians, indicate your share only.)

While data relating to professional expenses for 1981 and after from the SMS surveys are based on only self-employed physicians, professional expense information for years prior to 1981 was obtained from all physicians responding to the PSPs. Note, however, that hospital-based physicians were not included in PSP samples.

Net Income after Expenses before Taxes (Tables 42-49)

Physician net income is defined to include all earnings from medical practice after expenses but before taxes, including fringe benefits and contributions made into deferred compensation plans. Net income in 1987 was determined in the 1988 SMS core survey from responses to Question 32.

In addition, Question 33 was included as a probe to ensure that deferred compensation plan contributions were fully represented in net income. If the physician responded "no" to Question 33b, the response given to Question 33a was added to the response to Question 32 to obtain net income. Similar questions in the 1982 to 1987 SMS core surveys were used to obtain information on net income for 1981 to 1986, respectively. The questions in PSPs used to obtain net income information for years prior to 1981 included in Tables 43 and 47-49 were as follows:

1978

What was your 1978 individual before tax net income from medical practice to the nearest $1,000?

1979

What was your 1979 individual net income before taxes from medical practice? (Include all income from fees, salaries, retainers, etc., as well as the value of all fringe benefits paid on your behalf, e.g., Keogh Plan.)

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Socioeconomic Characteristics of Medical Practice 1988

Please note the following corrections to Socioeconomic Characteristics of Medical Practice 1988.

- Table 47. **Twenty-fifth Percentile Physician Net Income (in thousands of dollars) after Expenses before Taxes, 1978-79, 1981-87** (page 129)

Census Division	1985
New England	62
Middle Atlantic	63
East North Central	65
West North Central	59
South Atlantic	62
East South Central	65
West South Central	70
Mountain	60
Pacific	70

- Table 48. **Median Physician Net Income (in thousands of dollars) after Expenses before Taxes, 1978-79, 1981-87** (page 130)

Census Division	1985
New England	94
Middle Atlantic	90
East North Central	100
West North Central	85
South Atlantic	94
East South Central	92
West South Central	100
Mountain	85
Pacific	97

- Table 49. **Seventy-fifth Percentile Physician Net Income (in thousands of dollars) after Expenses before Taxes, 1978-79, 1981-87** (page 131)

Census Division	1985
New England	132
Middle Atlantic	135
East North Central	150
West North Central	139
South Atlantic	135
East South Central	140
West South Central	160
Mountain	124
Pacific	132